NIGERIA MARKET LEVEL ASSESSMENT REPORT

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Increasing Fruit and Vegetable Intake on Low-Income Population in Vietnam and Nigeria Through Food Systems Innovations

FVN Fruits and Vegetables intake Vietnam and Nigeria

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WAGENINGEN UNIVERSITY & RESEARCH

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Contributors

This report was prepared as part of the project "Increasing fruit and vegetable intake of low-income populations in Vietnam and Nigeria through food system innovations", known as the FVN Project for short. The project is coordinated by Wageningen University in collaboration with CGIAR Centers Bioversity International, the International Center for Tropical Agriculture (CIAT) and the International Food Policy Research Institute (IFPRI), the University of Ibadan, Hanoi Medical University, the National Institute of Nutrition (NIN, Vietnam), and Rikolto. The project is linked to the CGIAR Research Programme on Agriculture for Nutrition and Health (A4NH)

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Executive Summary

Using retailer sample from two market (180 retailers) and two neighborhood (87 retailers) locations, this Market Level Assessment (MLA) reveals overlaps and parallels in retailer characteristics, business modules as well as returns on investment. The MLA was carried out across four fruit and vegetable groups peculiar to the Nigerian environment namely Dark Green Leafy Vegetables (DGLV), Vitamin A Rich Fruits (VARF), Other Fruits (OF) and Other vegetables (OV).

In the market locations (Ojoo and Moniya), fruits and vegetables vendors were mainly female, sole owners of the enterprises, with low labour requirement. The vendors sold mainly Dark Green Leafy Vegetables (DGLV) and Other Fruits (OF). Historical purchase and sales outlay were shown to have dwindled when compared to 5 years recall. A large proportion of the vendors sold products from individual farms; however, the main external suppliers seem to be from farmers and rural brokers, with varying transactional characteristics in the market vendor and supplier relationship. Record keeping and contractual agreements with suppliers were very low in the retailer-supplier characteristics, while about one-third of the retailers received sorted commodities from their suppliers. The main service provided by retailers to suppliers was mainly in terms of provision of transportation to their stalls. Retailers sold to an average of 1, 741 clients, however only 56 were regulars and mainly direct consumers and other traditional retailers. The main complaints from clients to retailers were related to colour and firmness of the products bought. Market retailers of fruits and vegetables in Nigeria have low valued assets and low technology, with many selling on the roadsides; and physical assets valued at ₦17, 914.55. Business costs reveals weekly variable costs of N1, 088.89, inventory cost of N5911.77 and revenue of N4964.85 for average sale of 858.77kg; returning a loss of N94.61/kg at .

Neighbourhood retailers (Abaeja and Bagadaje) were mainly female vegetable (DGLV and OV) vendors, with average age of 46 years, and involved in other income generating activities. Similar to market vendors, the main supply was from farmers and wholesalers for an average of 45 suppliers within a year, with only 14 regulars. There was a very small proportion of neighbourhood vendors that kept supply record, or had a contractual agreement with suppliers; an indication of an informal market setting. The main clients were also direct consumers, and 44 regarded as regulars. While there was no vendor that kept record of sales, about a fifth of the sample had some form of contractual agreements with their clients, especially in proving services related to price and volume discounts. Business characteristics reveal that neighbourhood vendors were more likely to use a stall or a space within their dwelling residence for selling their commodities. With inventory cost of N4135.54, variable input cost of N516.49 and revenue of N2172.47 for average weekly sales of 89.6kg, a negative return of N132.25 per kg at the neighbourhood market.

While there were some transactional and functional differences across retailers in main market and neighborhoods, the MLA revealed some similarities as well. Market vendors were able to provide more services to suppliers than neighbourhood vendors, while they also received more from suppliers. More Neighbourhood vendors also received sorted commodities, which may account

for lower complaints made to suppliers when compared with the market vendors. Retailer- Client characteristics across market types showed more clients serviced by market vendors than neighbourhood vendors. However, clients received more services in terms of sorting, cleaning, discounts, and packaging in the neighbourhood. Again, while most of the neighborhood vendors transacted in their homes, market vendors used mainly roadside displays; with display items and cane baskets as the most important assets across the two market types. Labour use was low in both markets and neighborhood market vendors did not make use of hired labour. Neighbourhood vendors purchased inventory at a higher unit price than market vendors; an indication of poor economies of scale. Expectedly, revenue streams and cost of goods sold including business costs, inventory were higher in markets. Negative returns were witnessed across all market types, indicting non-profitable fruit and vegetable retailing enterprises.

INTRODUCTION

The intake of fruit and vegetable has been reportedly low in developing countries like Nigeria. This is even more so for the low-income population all over the country for whom fruits, and vegetables may seem luxury goods. The Fruit and Vegetable (FVN) project in Nigeria is premised on increasing fruit and vegetable intake among this economic group through supply and demand side interventions. As part of the baseline data collection for the FVN project, a market level assessment (MLA) was conducted in order to provide contextual information on fruit and vegetable availability and accessibility in neighborhoods of interest. The MLA provides foundational information for a supply side intervention focused on increasing product assortment and improving quality of fruits and vegetables from the perspective of retailers. More specifically, the MLA explores spatial differences across fruit and vegetable retailers and retail markets in (Oyo State) in Nigeria; while also examining how product and market type disaggregation reveal important characteristics of the fruit and vegetable markets. This information would facilitate understanding of how retailing dimensions can help to reveal possible pathways to change fruit and vegetable intake in Nigeria**.**

Study Location

The FVN study was conducted in **Abaeja** and **Bagadaje**, two neighborhoods in Akinyele Local Government Area (LGA) in Ibadan, Oyo state. Ibadan is the capital city of Oyo state and is the third most populous city in Nigeria and largest in geographic area. Abaeja is the more central and urbanized neighborhood, while Bagadaje **is** more peripheral and can be described as peri urban**.** The neighbourhood aspects of the study took place in these two locales. There are two major markets where residents of these neighbourhoods shop, namely **Ojoo** and **Moniya**, and these were also surveyed in the study (See map in Figure 1). Ojoo market is frequented by residents of Abeaje while Moniya market serves the Bagadeje community.

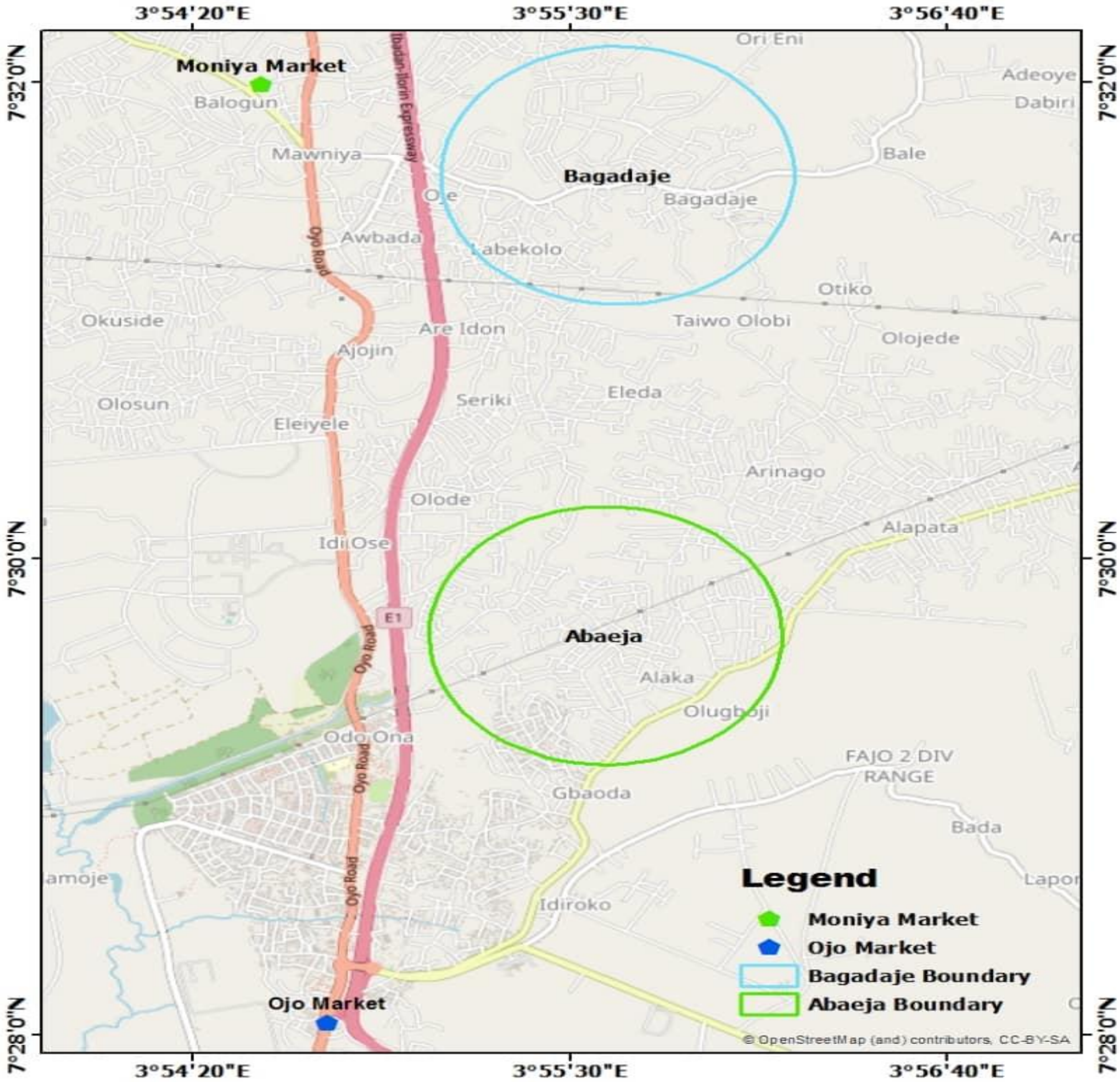


Figure 1: Map of Study sites

Study phases

The MLA was conducted in four different phases

- A Scoping phase conducted in June 2019 to provide information on the scale and scope of the market (see details in appendix 1)
- A Retailers Census conducted in July 2019 to capture all vendors selling fruits and vegetables in focal neighborhoods and relevant markets at the time of the survey (appendix 2)
- The main MLA Survey conducted in Aug/Sept 2019: and
- MLA Measures/Weight conversion survey to convert all local measures to standard measures conducted in Sept/Oct 2019 (appendix 3).

The discussion that follows is focused on the main MLA survey (see appendix 4 for the survey questions).

Market level assessment Survey

As earlier noted, the survey was carried out in 2 major fruits and vegetable markets in Oyo State, Nigeria. These are Ojoo(40%) and Moniya (60%) markets. The sample size was 180 retailers, drawn in a 2:3 proportion between Ojoo and Moniya (See figure 2). A parallel survey was carried out among neighborhood vendors as well with 66 percent of vendors in Abaeja and 33.7 percent in Bagadaje. The results of the MLA are discussed with respect to product categorization as well as market type.

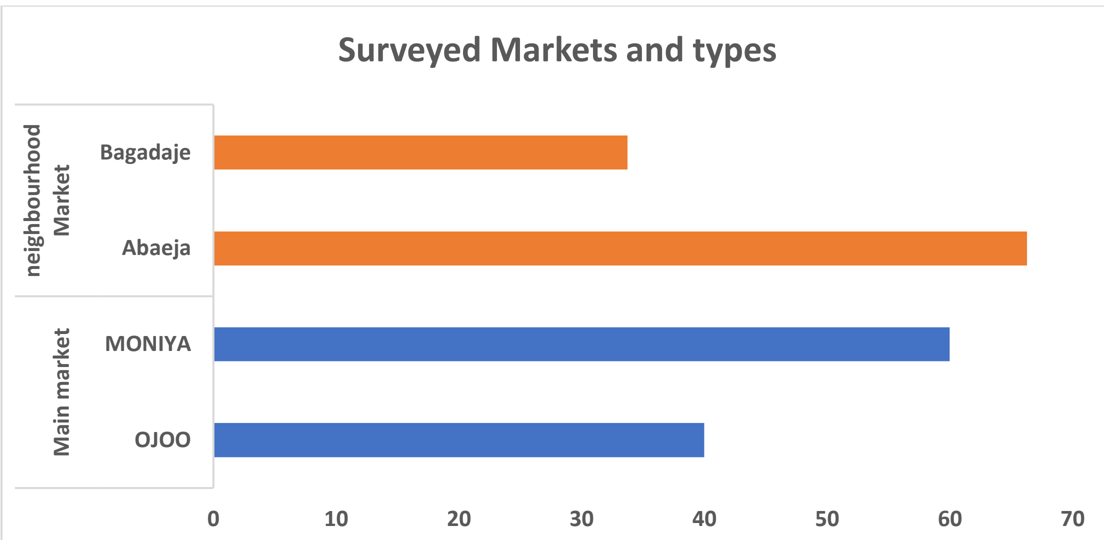


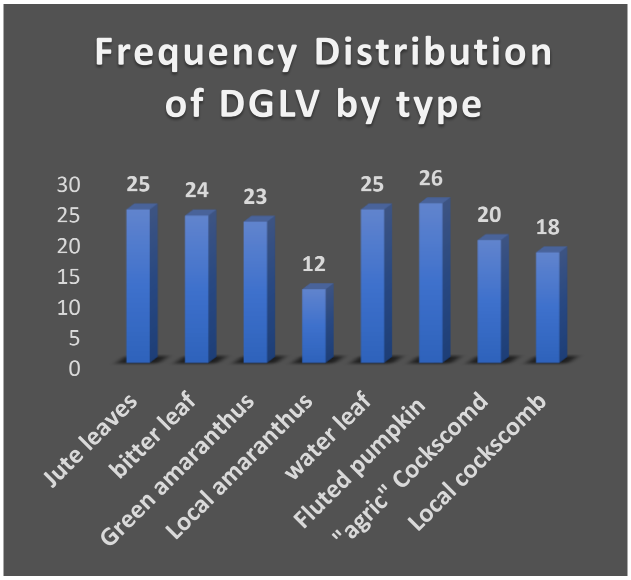
Figure 2: Distribution of Markets in MLA survey

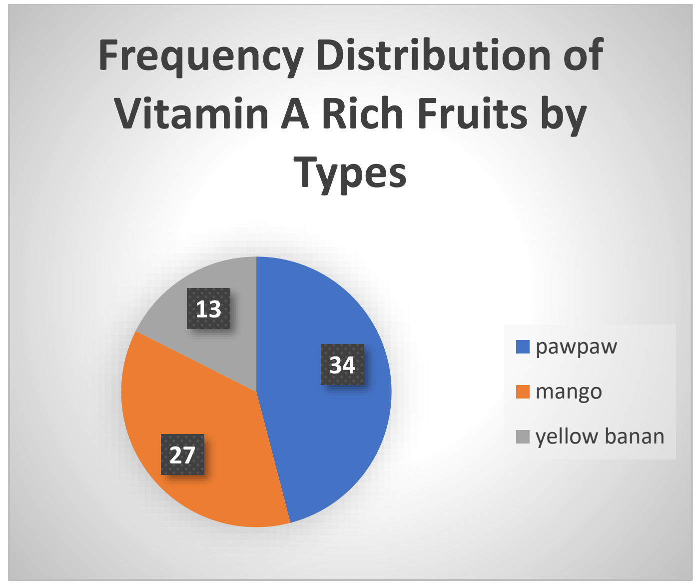
SECTION 1

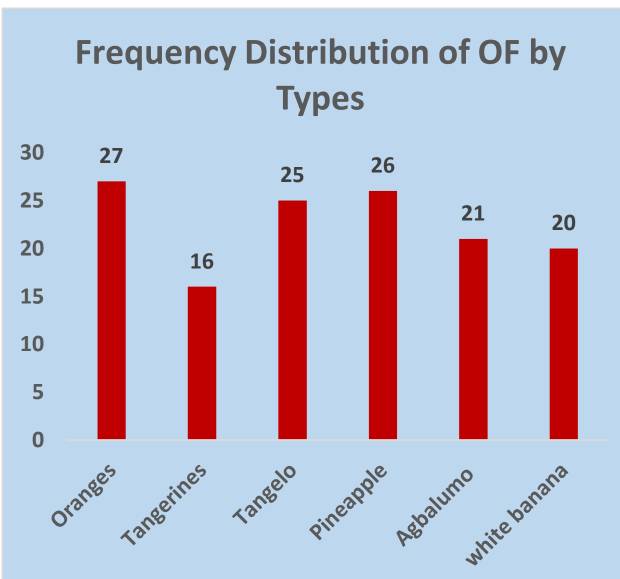
MAIN MARKET RETAILERS

Product Classification in Main Markets

The main commodities sold were categorized into 4 viz: Dark green leafy vegetables (DGLV-51.67%), Vitamin A Rich Fruits (VARF-36.67%), Other Fruits(OF-43.33%) and Other Vegetables (OV-33.33). The composition of each of these categorizations is presented in Figure 3.


Frequency Distribution of DGLV by type
30
25
20
15
10
5
0
25
24
23
12
25
26
20
18
Jute leaves
bitter leaf
Green amaranthus
Local amaranthus
water leaf
Fluted pumpkin
"agric" Cockscomd
Local cockscomb


Frequency Distribution of Vitamin A Rich Fruits by Types
13
34
27
pawpaw
mango
yellow banan


Frequency Distribution of OF by Types
30
25
20
15
10
5
0
27
16
25
26
21
20
Oranges
Tangerines
Tangelo
Pineapple
Agbalumo
white banana

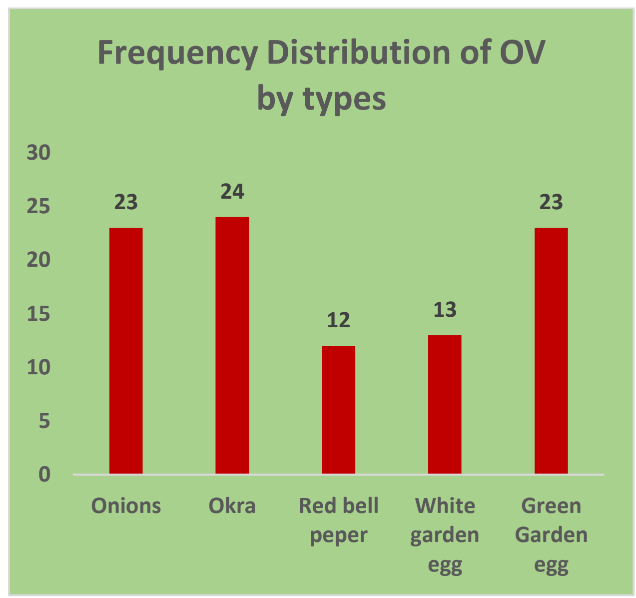

Frequency Distribution of OV by types
30
25
20
15
10
5
0
23
24
12
13
23
Onions
Okra
Red bell peper
White garden egg
Green Garden egg

Figure 3: Composition of Fruit and Vegetable Categorisation

Description of Fruit and Vegetable Retailers Across Product Categories in the Main Markets

The socio-demographic and enterprise characteristics of the retailers are presented in this section. The results presented in Table 1 reveals that the average age of retailers was 48.2±13 years with female dominance (97%). Sole ownership was the norm, with 98% of the retailers reported as owners; and again, with low male representation in ownership (3.4%). Being mainly sole ownership, results show that 98% were self-funded, with female dominance. The average number of years of experience was ~11 years, with about 23% of the retailers producing their commodities as crops in the past year. Some retailers sold their commodities in other locations(41%) apart from the surveyed markets; and about half (49%) of the retailers had other businesses.

Differences were observed across the vendors of the different categories of fruits and vegetables for some of these characteristics. DGLV retailers were the oldest in the group (50 years); while the youngest was among the OV retailers (45.7 years). Male and female distribution was similar across the groups. Among those who produced their own commodities, vegetable farmers topped the list at 29%(37%-DGLV; and 18%- OV), while 17% of the fruit retailers cropped own commodities (14%-VARF and 15%-OF). Retailers of DGLV again seem to be more diversified with about 57% of them involved in other forms of businesses, while 48% of VARF and 46% each of OF and OV retailers were involved in other businesses.

Table 1: Socioeconomic Characteristics of Retailers

VARIABLE	DGLF(N=93)	VARF(N=66)	OF (N=78)	OV (N=69)	All fruits (N=96)	All Veggies (N=132)	ALL (N=180)
AGE (years)*	50.01(13.21)	46.95(11.77)	48.35(12.78)	45.70(13.34)	47.46(12.46)	48.61(13.42)	48.22(13.0)
SEX							
Male	4(4.30)	2(3.03)	4(5.13)	1(1.45)	4(4.17)	4(3.03)	6(3.33)
Female	89(95.70)	64(96.97)	74(94.87)	68(98.55)	92(95.83)	128(96.97)	174(96.67)
OWNER(% Yes)	93(100)	65(98.48)	77(98.72)	67(97.10)	94(97.92)	130(98.48)	177(98.33)
Sex of owner							
Male	4(4.30)	2(3.08)	4(5.19)	1(1.49)	4(4.26)	4(3.08)	6(3.39)
Female	89(95.70)	63(96.92)	73(94.81)	66(98.51)	90(95.74)	126(96.92)	171(96.61)
Respondent funds	90(96.77)	64(96.67)	78(100)	68(98.55)	94(97.92)	128(96.97)	176(97.76)
SEX of funder							

Male	4(100)	2(100)	4(100)	1(100)	4(100)	4(100)	6(3.41)
Female	86(96.63)	62(96.88)	74(100)	67(98.53)	90(97.83)	124(96.88)	170(96.59)
Crop product in past year (% yes)	34(36.56)	9(13.64)	12(15.38)	13(18.84)	16(16.67)	38(28.79)	41(22.78)
Years of experience*	14.18(11.31)	14.09(10.95)	15.27(11.91)	13.38(9.71)	14.73(11.48)	14.11(10.98)	13.57(10.58)
Sells in other location	41(44.09)	25(37.88)	26(33.33)	34(49.28)	36(37.50)	58(43.94)	74(41.11)
Other businesses							
Yes	53(56.99)	32(48.48)	36(46.15)	32(46.38)	45(46.88)	69(52.27)	89(49.44)
No	40(43.01)	34(51.52)	42(53.85)	37(53.62)	51(53.13)	63(47.73)	91(50.56)

- *Figures in parentheses are standard deviations;
- Other figures in parentheses are percentages

Functional Status of Retailer

In this section, we present the functioning of the retailers of fruits and vegetables in the study areas. These include general transactional characteristics of the retailers, as well as historical records of purchase and sales of commodities. The results are presented in Table 2.

Retailers who Sold Own produce

Our results also revealed that almost 93% of the retailers who cropped the produce actually sell them. Of the vendors who sell their own products, 87.5% and 97.4% were fruit and vegetable vendors respectively; with 100% of the DGLV and VARF selling their own farm produce, while 83% and 92% of OF and OV vendors sell their own farm produce.

Historical Outlay of Sales

Weekly volume of commodity purchased in high and low seasons also reveals interesting estimates over time(Table 2). While current weekly volume purchased in high and low season were estimated at 156.34kg and 81.48kg, respectively; the volume 5 years ago was 182.44kg and 84.16kg for high and low seasons, respectively. This suggests a downward trend in merchandise purchase by the retailers, a situation not unconnected to the general downturn in the Nigerian economy (Raaijmakers et al, 2019). Whereas the maximum weekly volume sold of fruits and vegetables was given as 266.27kg; while the minimum volume sold was 129.61kg.

Product type disaggregation shows that weekly volume sold in high and low seasons were 168.96kg and 80.79kg for fruit vendors; and 145.13kg and 78.17kg for all vegetable vendors, respectively. For vendors of specific categories of DGLV, VARF, OF and OV, weekly volumes in high season were 161.92kg, 164.27kg, 180.09kg and 130.25kg, respectively. In low seasons, DGLV, VARF, OF and OV vendors sold estimated volumes of 93.75kg, 77.33kg, 86.19kg and 73.39kg, respectively. The trend analysis reveals higher volumes sold in both high and low seasons for the 5-year recall period across all vendor and product types.

Table 2: Functional Status of Retailers

	DGL Vegetables	VAR Fruits	other fruits	Other Vegetables	All fruits	All Vegetables	All
Observations	**93**	**66**	**78**	**69**	**96**	**132**	**180**
Transaction Characteristics							
Share of retailers who sell their own production	34(100)	9(100)	10(83.33)	12(92.31)	14(87.50)	37(97.37)	38(92.68)
Purchasing Volume per season (KGS)							
Weekly volume in high season (HS)	161.92	164.27	180.09	130.25	168.96	145.13	156.34
Weekly volume in HS (5 years ago)	189.62	168.9	196.06	165.3	180.65	175.14	182.44
Weekly volume in low season (LS)	93.75	77.33	86.19	73.39	80.79	78.17	81.48
Weekly volume in LS (5 years ago)	86.17	75.12	82.2	85.62	77.52	81.65	84.16
Minimum and Maximum Sold Volume (KGS)							
Maximum weekly volume sold in HS	261.05	196.34	206.08	321.47	194.55	285.19	266.27
Minimum weekly volume sold in HS	112.88	78.49	73.75	184.42	69.18	145.66	129.61

Retailer-Supplier Nexus

Fruits and Vegetable retailers in this study purchased their commodities from a variety of suppliers. The characteristics of this relationship are presented in Table 3; showing types of suppliers, number of suppliers, quantity purchased and price, transaction characteristics, service provided by suppliers as well as complaints from the retailers to the suppliers.

Current Stock of Inventory (Volume purchased)

The current volume purchased (at the time of this survey) on the average was 280.85kg at ₦74.98/kg. Fruit vendors purchased a higher volume at 365.55kg, compared to vegetable sellers at 238.44kg. Specifically, VARF and OF vendors purchased 409.75kg and 385.21kg, respectively; higher than DGLV (236.71kg) and OV (273.05kg),respectively.

Main Suppliers

The results show that 92.7% of retailers who were involved in farm production sold their own produce (n=41). However, apart from those who sold from their own products, the main supply source of the retailers was directly from farmers (73%), followed by wholesalers (20.6%). Others include rural brokers (11%),importers (1%) and agribusiness (<1%).

In addition to sourcing from other suppliers, DGLV and VARF vendors sold all the fruits and vegetable commodities produced on their own farms. Commodities supplied directly from farmers as well as rural brokers were higher with fruit vendors (81% and 13.5%) than vegetable vendors (72% and 7.6%), respectively. Wholesalers supplied more of vegetable vendors (24%), while fruit vendors were a little more likely to get supplies from agribusinesses and importers (1.04%), than vegetable vendors (0.8%).

On the average, the retailers had 47 suppliers in the year, with 13 being regular suppliers. In general, fruit vendors had 60 suppliers with 16 of them regarded as regular. VARF and OF vendors averaged the same number of suppliers, having about 19 and 17 regular suppliers respectively. However, DGLV and OV vendors had 40 and 45 suppliers respectively, with regular suppliers approximating 12.

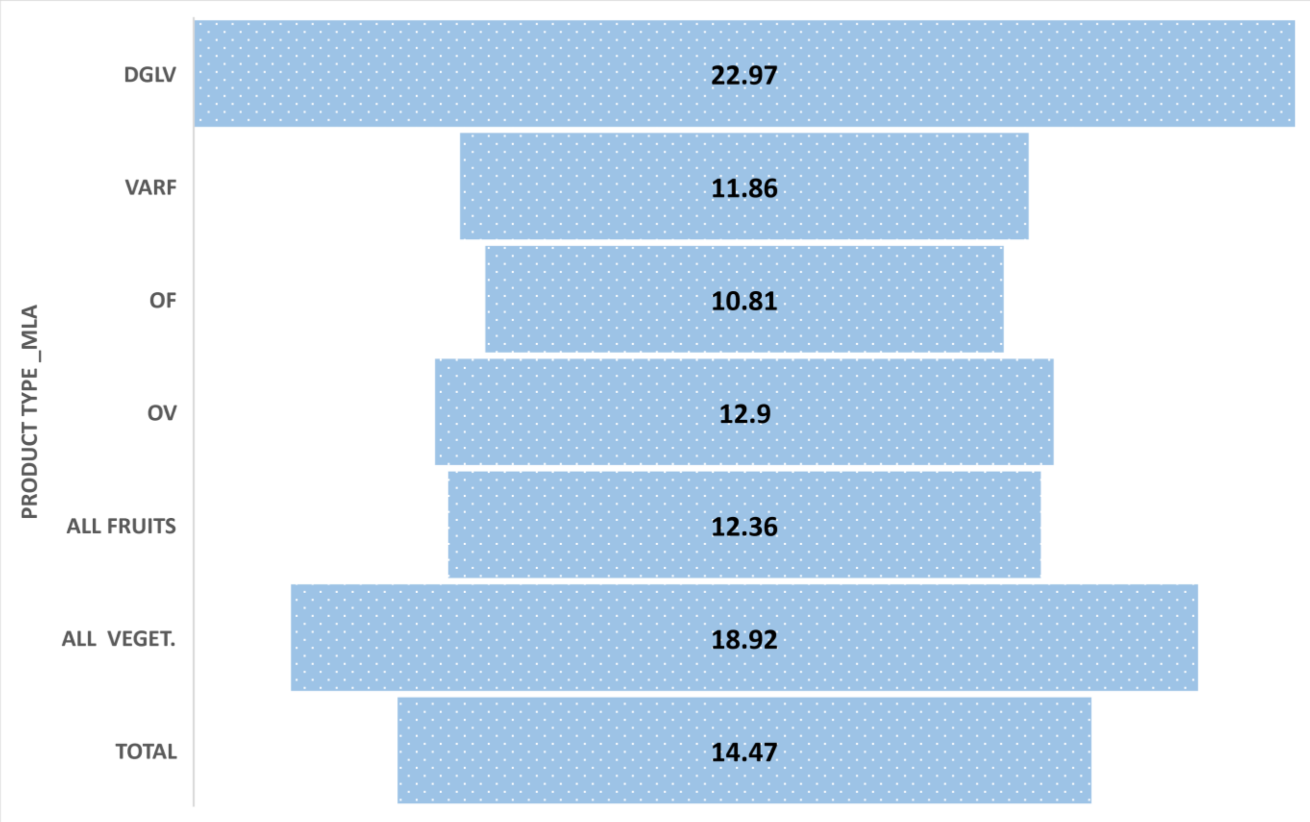


Figure 4: Percentage Distribution Of Retailers By Agreements With Suppliers

Transactional Characteristics in Retailer-Supplier Relationship

Transactional characteristics explored in this survey includes purchase of sorted commodities, contract agreements and record keeping. These characteristics place premium on the products purchased and sold by the vendors on the one hand and helps to keep track of retail activities on the other. Only 31% of the retailers purchased sorted products from their suppliers; with the lower representation among vegetable retailers (29%). Within the "All fruit" retailer sample, about 34% bought sorted products.

Whereas record keeping is important in agricultural supply chains (Kahan, 2013), the results show inadequacy among all retailers with respect to record keeping in their business activities. On average, ~2% of all retailers kept records of business transactions with their suppliers. In the disaggregation, at least 2% of fruit retailers kept records while less than 1% of vegetable sellers did the same. This reveals a high level of informality in transactions among agricultural retailers, and is also indicative of low levels of literacy in the sector.

Contract agreements have been reported as key to maintaining inventory supplies in agricultural marketing (Naik and Suresh, 2018). In this MLA survey, we found that just about 14.5% of all retailers had an agreement with their suppliers. Vegetable farmers were found to be in higher representation in this category (~19%), while 12% of fruit retailers responded to having an agreement (see Figure 4). This again shows a high level of informality within the marketing node of the fruit and vegetable value chain in Nigeria. The consequences may be irregularity in supply, inconsistent standards as well as reduced capacity to cope with supply shocks in the market.

Table 3: Retailer and Supplier Relationship in Fruit and Vegetable Markets in Nigeria

	DGLV(74)	VARF	OF	OV	All fruit	All veggies	All
Observations							
Weekly volume NOW (KGS)	236.51	409.75	385.21	273.05	365.55	238.44	280.85
Price per KG (N)	56.89	65.61	69.41	110.15	66.72	85.75	74.98
Origin of supply (%)							
Own production(n=41)	34(100)	9(100)	10(83.33)	12(92.31)	14(87.50)	37(97.37)	38(92.68)
Directly from farmers(n=180)	67(72.04)	52(78.79)	64(82.05)	52(75.36)	78(81.25)	95(71.97)	132(73.33)
Rural Broker(n=180)	7(7.53)	9(13.64)	12(15.38)	8(11.59)	13(13.54)	10(7.59)	20(11.11)
Wholesaler(n=180)	17(18.28)	9(13.64)	13(16.67)	26(37.68)	14(14.58)	32(24.24)	37(20.56
Agribusiness(n=180)	0.0	0.0	1(1.28)	0.0	1(1.04)	0.0	1(0.56)
Importer(n=180)	1(1.08)	1(1.52)	0.0	0.0	1(1.04)	1(0.76)	2(1.11)
Transaction characteristics							
Share of retailers who buy product sorted (%), N=159	23(31.08)	21(35.69)	25(33.78)	20(32.26)	30(33.71)	32(28.83)	49(30.82)
Share of retailers who keep written records of purchase (%), N=3	1(1.35)	1(1.69)	1(1.35)	0.0	2(2.25)	1(0.90)	3(1.89)
Share of retailers who have any agreement with suppliers (%), N=159	17(22.97)	7(11.86)	8(10.81)	8(12.90)	11(12.36)	21(18.92)	23(14.47)
Number of suppliers (frequency)	39.4	59.9	66.2	45.0	60.9	40.0	46.5
Number of regular suppliers(frequency)	11.7	18.6	16.9	11.5	15.7	11.0	12.8
Services PROVIDED to suppliers (%)							
No service provided	36(38.71)	42(63.64)	47(60.26)	37(53.62)	60(62.50)	61(46.21)	96(53.33)
Advancement of money	13(13.98)	7(10.61)	11(14.10)	6(8.70)	11(11.46)	15(11.36)	20(11.11)
Inputs	3(3.23)	1(1.52)	(1(1.28)	1(1.45)	1(1.04)	3(2.27)	3(1.67)
Harvests	2(2.15)	1(1.52)	2(2.56)	0	2(2.08)	2(1.52)	3(1.67)
Own transport	26(27.96)	13(19.70)	1(1.28)	18(26.09)	22(22.92)	37(28.03)	49(27.22)
Transportation arrangements	5(5.38)	2(3.03)	3(3.85)	2(2.90)	3(3.13)	6(4.55)	6(3.33)
Services RECEIVED by suppliers (%)							
No service received	50(53.76)	47(71.21)	62(79.49)	48(69.57)	73(76.04)	79(59.85)	117(65.00)

Delivery in stall	19(20.43)	7(10.61)	10(12.82)	12(17.39)	13(13.54)	24(18.18)	30(16.67)
Sorting	3(3.23)	2(3.03)	4(5.13)	3(4.35)	4(4.17)	4(3.03)	6(3.33)
Sales on credit	12(12.90)	7(10.61)	9(11.54)	9(13.04)	10(10.42)	16(12.12)	20(11.11)
Packaging	17(18.28)	12(18.18)	11(14.10)	14(20.29)	17(17.71)	29(21.97)	35(19.44)
Cleaning	1(1.08)	1(1.52)	1(1.28)	0	1(1.04)	1(0.76)	1(0.59)
Other	-	-	-	-			-
Share of retailers who received complaints from suppliers over the past 12 months (%)							
Yes	31(33.33)	29(43.94)	35(44.87)	30(43.48)	43(44.79)	47(35.61)	69(38.33)
No	62(66.67)	37(56.06)	43(55.13)	39(56.52)	53(55.21)	85(64.39)	111(61.67)
Reason of complaint (%)							
Dirty product	2(2.15)	0	1(1.28)	1(1.45)	1(1.04)	2(1.52)	2(1.11)
Variety	1(1.08)	2(3.03)	4(5.13)	1(1.45)	4(4.17)	2(1.52)	4(2.22)
Color	10(10.75)	4(6.06)	7(8.97)	5(7.25)	7(7.29)	11(8.33)	14(7.78)
Size	2(2.15)	5(7.58)	6(7.69)	1(1.45)	6(6.25)	3(2.27)	8(4.44)
Firmness	5(5.38)	8(12.12)	5(6.41)	9(13.04)	9(9.38)	10(7.58)	15(8.33)
Lack of volume in the box	5(5.38)	0	1(1.28)	1(1.45)	6(6.25)	9(6.82)	13(7.22)
Rottenness	8(8.60)	12(18.18)	11(14.10)	12(17.39)	15(15.63)	15(11.36)	23(12.78)
Bruised	0	4(6.06)	4(5.13)	0	6(6.25)	0	6(3.33)
Other							

Services Provided to Suppliers and Received by Suppliers

Over half (53%) of the retailers did not provide any service to their suppliers (Table 3). However, 27% provided their own transport, 11% gave money advance and 3% had other transportation arrangements with the suppliers. Approximately 2% of the retailers provided inputs and harvest, respectively as services to their suppliers.

At least 62% of fruit retailers and 46% of vegetable retailers did not provide any service to the suppliers. Overall, vegetable retailers provide more services to suppliers than fruit retailers. The service with the highest proportion of retailers involved was provision of own transport, which was distributed as 28%, 20%, 1% and 26% across DGLV, VARF, OF and OV retailers. Also, ~14% of DGLV and OV retailers provided advance payments to suppliers, while about 11% and 9% of OF and OV retailers did same.

In general, 65% of the suppliers did not provide any form of service to the retailers in their business dealings. Of those who provided a service, the most reported was packaging of produce, received by ~19% of the retailers, this is followed by 17% who got delivery of produce to their stalls, and 11% who received produce on credit. Only about 3% of the suppliers sorted the produce for the retailers and less than 1% cleaned the produce supplied. Specifically, more vegetable retailers received delivery at their stalls (18%), credit sales (12%) and packaging (22%). Sorting seems to be the most important service from the point of view of the fruit retailers (~4%).

Quality Complaints made by Retailers to Suppliers

in the survey, up to 38% of the retailers complained about produce quality to their suppliers. The complaints ranged from dirty products, unacceptable colour, variety and firmness, as well as lack of a proper volume measure, rottenness and bruising of the products (see Figure 4). Rottenness was the modal complaint made by the retailers (12.8%), and this was reported by 15.6% and 11.4% of fruit and vegetable retailers respectively. This was followed by lack of firmness (8.3%) reported by 9.4% and 7.6% of fruit and vegetable retailers respectively.

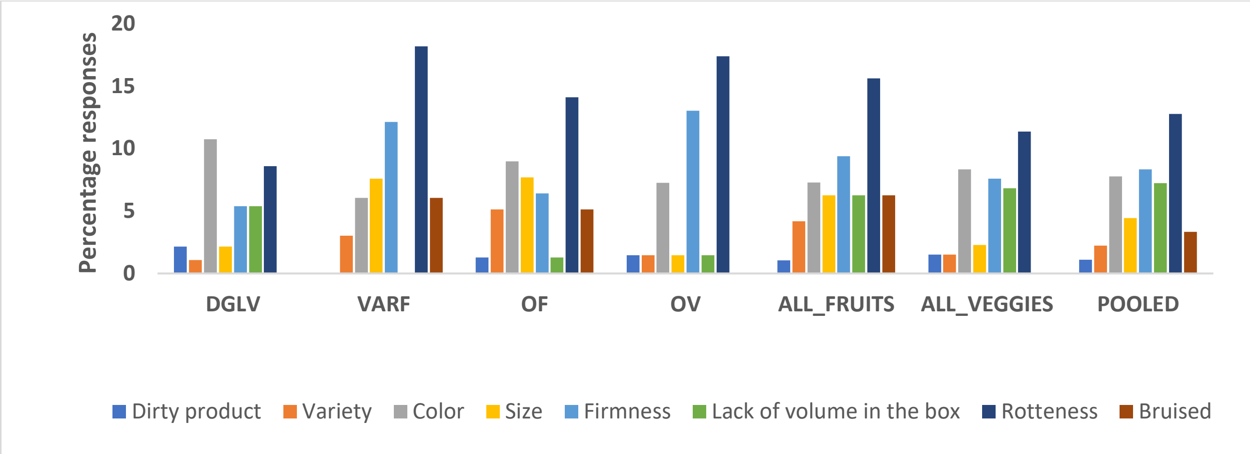


Figure 4: Components of Complaints made by Retailers to Suppliers

Retailer-Buyer/Client Nexus

The relationship between retailers and buyers of fruits and vegetables is presented in this section (Table 4, Figure 5).

Current Weekly Sales

The result in Table 4 shows that current sales was quantified at 358.77kg per week at ₦73.46/kg. It is intuitive that sales may exceed goods purchase because of inventory from previous purchase.

The largest volume was sold by vegetable retailers at 396.29kg at ₦79.83/kg, while fruit retailers sold an average on 364.2kg at ₦57.61/kg. across the product categories, DGLV, VARF, OF and OV retailers sold current average volume of 473.4kg, 424.8kg, 379.3kg and 364.2kg,respectively.

Price per kg sold across product groups was reported at ₦35.95, ₦56.28, ₦58.81 and ₦122.82, respectively for DGLV, VARF, OF and OV.

Main Clients(Buyers)

The results, as shown in Table 4 reveals five (5) main buyers of fruits and vegetables viz, Direct consumers (75.6%), traditional retailers (28.3%), street/sidewalk caterers/restaurants (18.9%), ambulant street vendors /hawkers (14.4%) and neighbourhood supermarkets (<1%). Fruit retailers as a group sold more to direct consumers than vegetable retailers (72%). However, vegetable retailers sold more to traditional retailers and street caterers (34% and 23.5%) than fruit sellers (28% and 18.9%) .

In relation to the buyers, an average of 1, 741 buyers interacted with the retailers in the past year with fruit and vegetable sellers reporting sales to 2417 and 1329 clients respectively. However, only 3% of the average number of customers (~56) were regular buyers, distributed as 56, 74, 78, 53 across DGLV, VARF, OF and OV retailers, respectively.

Transactional Characteristics with Clients

Transactional characteristics with buyers reveal that only 35% of the retailers sell sorted products, and fruit retailers top the group at 41%; while only 33% of vegetable retailers reported sorting their produce before sales. This translates down the product category where that 42% and 41% of VARF and OF retailers sorted their products and 32% and 35% of DGLV and OV retailers sorted their products.

Again, there was low level of record keeping among the retailers with respect to transaction with their buyers as results revealed that only 3.3% of the retailers had record of sales with the highest across vegetable retailers (4.3% for DGLV and OV retailers, respectively). Only about 2% of VARF and OF retailers kept records of sales.

Considering the low proportion of regular buyers, it is not unexpected that only about 13% have a contract with their clients. The proportion of fruit and vegetable retailers that had agreements with their clients was 14% (14% and 12% with VARF and OF retailers)and 15% (20% and 8% for DGLV and OV retailers), respectively.

Table 4: Retailer-Buyer Nexus in Nigerian Fruits and Vegetables Market

	DGLV	VARF	OF	Other Vegetables	all fruits	all veggies	All
Observations	93	66	78				180
Weekly volume NOW (KGS)	473.4	424.8	379.3	211.67	364.2	396.29	358.77
Price per KG (N thousands)	35.95	56.28	58.1	122.82	57.61	79.83	73.46

Clients (%)							
Directly to consumers	69(74.19)	60(90.91)	70(89.74)	48(69.57)	84(87.50)	95(71.97)	136(75.56)
Traditional retailer	36(38.71)	21(31.32)	22(28.21)	21(30.43)	27(28.13)	45(34.09)	51(28.33)
Ambulant Street Vendors/hawkers	13(13.98)	9(13.64)	10(12.82)	15(21.74)	13(13.54)	21(15.91)	26(14.44)
Street/sidewalk catering/restaurants	25(26.88)	8(12.12)	10(12.82)	20(28.99)	14(14.58)	31(23.48)	34(18.89)
Neighbourhood supermarket	1(1.08)	0.0	0.0	1(1.45)	0.0	1(0.76)	1(0.56)
Transaction characteristics							
Share of retailers who sell product sorted (%)	30(32.26)	27(41.54)	32(41.56	24(35.29)	39(41.05)	43(32.82)	63(35.39)
Share of retailers who keep written records of sell (%)	4(4.30)	1(1.52)	2(2.56)	3(4.35)	2(2.08)	5(3.79)	6(3.33)
Share of retailers who have any agreement with buyers (%); n=178)	19(20.43)	9(13.85)	9(11.69)	6(8.82)	13(13.68)	20(15.27)	23(12.94)
Number of clients	1263.3	2574.1	2778.9	1527.8	2417.0	1328.6	1741.0
Number of regular clients	56.2	73.9	77.7	52.7	70.7	49.9	55.9
Services PROVIDED to clients (%)							
No service provided	56(60.22)	42(63.64)	52(66.67)	42(60.87)	62(64.58)	78(59.09)	107(59.44)
Discount over prices)	40(43.01)	28(42.42)	31(41.03)	28(40.58)	37(38.54)	52(39.39)	65(36.1)
Volume discounts	35(37.73)	31(6.97)	33(423.1)	29(42.03)	38(39.58)	50(37.88)	67(37.22)
Sales on credit	11(11.83)	6(9.09)	4(5.13)	7(10.14)	6(6.25)	16(12.12)	18(10)
Packing	16(17.20)	13(19.70)	14(17.95)	11(15.94)	17(17.71)	24(18.18)	36(20.0)
Special sorting	4(4.30)	4(6.06)	4(5.13)	2(2.90)	5(5.21)	4(3.03)	9(5.00)
Other							
Share of retailers who received complaints from buyers over the past 12 months (%) (n=176)							
Yes	17(18.68)	5(7.69)	70(92.11)	15(22.39)	7(7.45)	24(18.60)	26(14.77)
No	74(81.32)	60(92.31)	6(7.89)	52(77.61)	87(92.55)	105(81.40)	150(85.23)
Reason of complaint (%)							
Dirty product	1(1.08)	0	0	2(2.90)	0	2(1.52)	2(1.11)
Variety	1(1.08)	0	0	2(2.90)	0	2(1.52)	2(1.11)
Color	13(13.98)	5(7.58)	7(7.69)	8(11.59)	7(7.29)	15(11.36)	17(9.44)
Size	0	4(6.06)	3(3.85)	5(7.25)	4(4.17)	5(3.79)	8(4.44)
Firmness	7(7.53)	5(7.58)	6(7.69)	4(5.80)	7(7.29)	8(6.06)	12(6.67)
Lack of volume in the box	0	0	0	0	0	0	0
Deterioration/rottenness	5(5.38)	7(10.61)	5(6.41)	6(8.70)	7(7.29)	9(6.82)	11(6.11)
Bruised	4(4.30)	2(3.03)	2(2.56)	4(5.80)	3(3.13)	6(4.55)	6(3.33)
Other	3(3.23)	1(1.52)	1(1.28)	3(4.35)	1(1.04)	4(3.03)	4(2.22)

Services Provided to Clients

In general, over half (59%) of the retailers did not provide any service other than selling to the buyers (see Figure 5). However, services provided by others include price discount (36%); volume discount (37%), sales on credit (10%), packaging (20%) and some form of special sorting (5%).

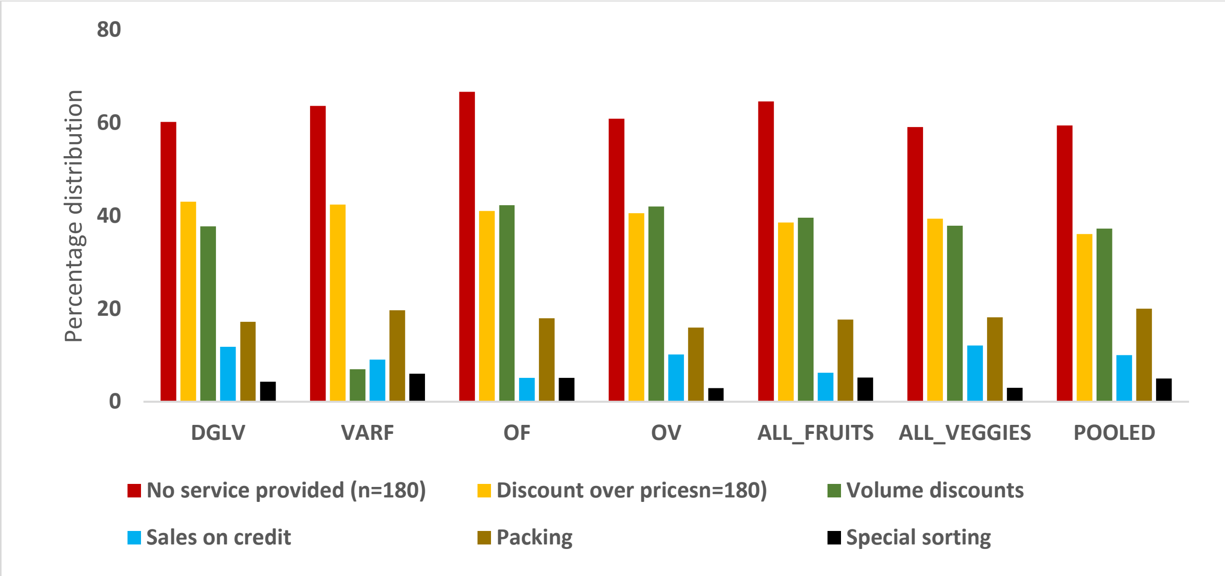


Figure 5:Percentage Distribution of Retailers by Services Provided to Clients

While price discounts and credit sales were more common among vegetable retailers (39.4% and 12%, respectively), volume discount and special sorting was more usual among fruit retailers (39.6% and 5%, respectively). Approximately 18% of both fruits and vegetable retailers were involved in packaging.

Quality Complaints from Clients to Retailers

The proportion of retailers who received complaints about the fruits and vegetables sold to the buyers was only 15% (table 4). This may not be surprising given the low percentage of regular buyers of the total average of 1741 buyers in a year. The main complaints received from the buyers were related to colour (9%), firmness (7%), rottenness (6%) and size (4%). Others were connected to bruising (3%), variety and dirtiness (1%, respectively). The most common quality complaints among fruit retailers were related to size(4%), firmness (7%) and rottenness (7%). Vegetable retailers on the other hand received complaints more in the aspects of dirtiness(1.5%), unacceptable variety (1.5%), Colour (11.4%) and bruising (4.6%) when compared to the fruit retailers.

Assets Outlay of Retailers

In this section, we explore the physical and enterprise assets used by the retailers (Table 5). This include location and type of market space as well as display items, vehicles, lamps etc. The average value of these assets is also presented.

Location of Sales

Majority of the retailers (~66%) were located on the roadside for their marketing activities, while 25% used a permanent table not on the roadside. Only 7% of the retailers had stalls/shops within the market. Less than 2% of the retailers sold from their home premises while about 1% were hawkers and wheelbarrow pushers, respectively. Fruit sellers sold more in stall (8%) and on permanent tables (29%), whereas vegetable retailers were more likely to be found selling on roadsides (72%) and at home (2%).

Physical Assets in Fruits and Vegetable Retailing

The most important assets owned by the retailers were display items as reported by ~93% of the respondents. This includes plates and bowls used to both as a means of display and measure. Display in cane baskets was reported by 76% of the retailers; and up to 46% had commercial umbrella to protect them and their wares from sun and rain. Also, about 79% had a bench/stool either for seating or for display. Ownership of a lamp was reported by only 32% of the retailers and a fuel generator was reported by less than 1% of the retailers. With regards to product storage, 62.5% had a store for their products, while no one had a refrigerator. In terms of mobility, only 2% had a motorcycle, and none reported having any other form of transportation, while 73% of the retailers had a phone.

Specifically, more fruit retailers had cane baskets (90%), commercial umbrella (54%), wheelbarrows (6%)lamps, (38%), stores (63%) and benches (83%). On the other hand , more vegetable retailers reported display items (94%) and phones (82%). Generator was reported by only one fruit retailer, while more value adding assets such as refrigerators (for time value) and vehicles(place values) were not reported. This implies a low-level resource base for fruits and vegetable retailers in the study areas, with implications for the quality of commodities as well as profitability.

The average total value of assets owned by the retailers in this survey was estimated at ₦17, 914.55. Using a straight-line depreciation method at 10%, a depreciation estimates of ₦1, 791/ annum is to be valued in the business outlay of the retailers. However, this may not be useful, since most of the assets are already classified as variable inputs in the retailers' outlay. The average value of assets across product categories was estimated at ₦14, 096.02; ₦ 27, 141.67, ₦ 17, 984.87 and ₦ 15, 715.44 for DGLV, VARF, OF and OV retailers, respectively. Overall, fruit retailers had higher value of assets (₦ 21, 866.88) than vegetable retailers (₦ 14, 857.85)[1]

Table 5: Description of Assets Owned by Fruit and Vegetable Retailers in Nigeria

	DGLV	VARF	OF	Other Vegetables	all fruits	all veggies	All
Observations							**180**
Location of stall/shop of retailers							
In home premises	2(2.15)	0	0	2(2.90)	0	2(1.52)	2(1.11)
Market stall/shop	8(8.60)	4(6.06)	6(7.69)	4(5.80)	8(8.33)	9(6.82)	13(7.22)
Permanent table	13(13.98)	22(33.33)	24(30.77)	16(23.19)	28(29.17)	26(19.70)	45(25.00)
Roadside display	70(75.27)	39(59.09)	46(58.97)	47(68.12)	58(60.42)	95(71.97)	118(65.56)
Wheelbarrow(stationary)	0	0	1(1.28)	0	1(1.04)	0	1(0.56)
Hawker	0	1(1.52)	1(1.28)	0	1(1.04)	0	1(0.56)
Other							
Shares of retailers owning different type of assets:							
Cane basket	57(61.29)	60(90.91)	71(91.03)	58(84.06)	86(89.58)	93(70.45)	137(76.11)
Commercial Umbrella	35(38.04)	37(56.06)	46(58.97)	31(46.27)	52(54.17)	54(41.86)	82(46.33)
Wheelbarrow(stationary)	4(4.40)	4(6.15)	4(5.19)	2(2.94)	6(6.32)	4(3.10)	8(4.52)
Display items	85(91.40)	60(90.91)	71(91.03)	65(95.59	86(89.58)	123(93.89)	166(92.74)
Motorcycle	2(2.15)	2(3.03)	1(1.28)	1(1.47)	2(2.08)	3(2.29)	3(1.68)
Tricycle	0	0	0	0	0	0	0
Micra(small vehicle)	0	0	0	0	0	0	0
Bus	0	0	0	0	0	0	0

[1] At current official exchange rates of approximately N400 per dollar, fruit retailers had approximately $52 in assets, while vegetable retailers had $37 in assets on average.

Phone	79(84.95)	49(74.24)	56(71.79)	56(82.35)	70(72.92)	107(81.68)	140(78.21)
Lamp	27(29.35)	24(36.36)	29(37.18)	26(38.81)	36(37.50)	41(31.78)	57(32.20)
Store	44(47.31)	43(65.15)	50(64.10)	40(59.70)	60(62.50)	65(50.00)	97(54.49)
Benches/stools	64(68.82)	54(81.82)	66(84.62)	55(80.88)	80(83.33)	99(75.57)	141(78.77)
Refrigerator	0	0	0	0	0	0	0
Generator	0	0	1(1.28)	0	1(1.04)	0	1(0.56)
Others	7(7.61)	4(6.06)	10(12.82)	8(11.76)	10(10.42)	11(8.46)	18(10.11)
Total value of business assets (₦ thousands);n=178	14096.2	27141.67	17984.87	15715.44	21866.88	14857.85	17914.55

Business Costs and Profit Outlay of Retailers

In this section, we report the indices that make up the business cycle of the retailers. This includes a description of labour use, variable inputs, business costs, volume sold, and revenue generated and profit. The results are presented in Table 6, Figure 6 and Figure 7.

Labour use in Fruit and Vegetable retailing

Findings reveal that labour use in fruits and vegetable markers in Nigeria is low. On average, retailers had one (1) daily worker employed in their enterprises, with about 2 family members working in the enterprises. These figures were confirmed across all product categories. However, DGLV retailers had approximately 3 family members working in the enterprise. This may suggest that some other family members were traders in their own rights as may be seen by about 36% of the retailers reporting other family members as traders.

Business Cost Outlay

Costs of Goods sold, i. e business costs (Figure 6) were estimated as the addition of costs of variable inputs and inventory purchased. This helped to estimate how much the retailers spent in a week on their retailing enterprise.

The other variable inputs estimated in this survey include electricity, fuel for generators, taxes, water, association fees, telephone, pest-control, and other miscellaneous expenses. The average weekly business costs on variable inputs including labour expenses was an average of N921.41. This is quite low and highlights once again the marginal livelihoods of most fruit and vegetable retailers. Fruit retailers had higher weekly business costs at ₦1, 088.89 (₦1,118.26-VARF and ₦1,053.83-OF); while vegetable retailers have business, costs estimated at ₦762.79 (₦808.93-DGLV and ₦761.69-OV). These findings show that business costs in vegetable retailing may be significantly lower than that of fruit retailing, with implications for market entry and profit maximization among low resource agricultural retailers.

Inventory is a key input in calculating business cost. Total inventory purchased was estimated as 280kg at N74/kg, giving an inventory cost of ₦5911. 77. Inventory supply was higher for vegetable retailers (₦ 8.082.27) than fruit retailers (₦ 5, 725.1), mainly as a result of the unit price of vegetables being higher (₦ 85.75) than that of fruits (₦ 66.72).

Overall weekly business cost was therefore estimated as ₦5, 878.82, disaggregated as ₦4,277.91, ₦6739.97, ₦6889.27 and ₦8745.43 across DGLV, VARF, OF and OV retailers, respectively. As seen in the earlier discussion, fruit retailers returned higher weekly business costs (₦ 6, 398.61) than vegetable retailers (₦ 5, 878.67).

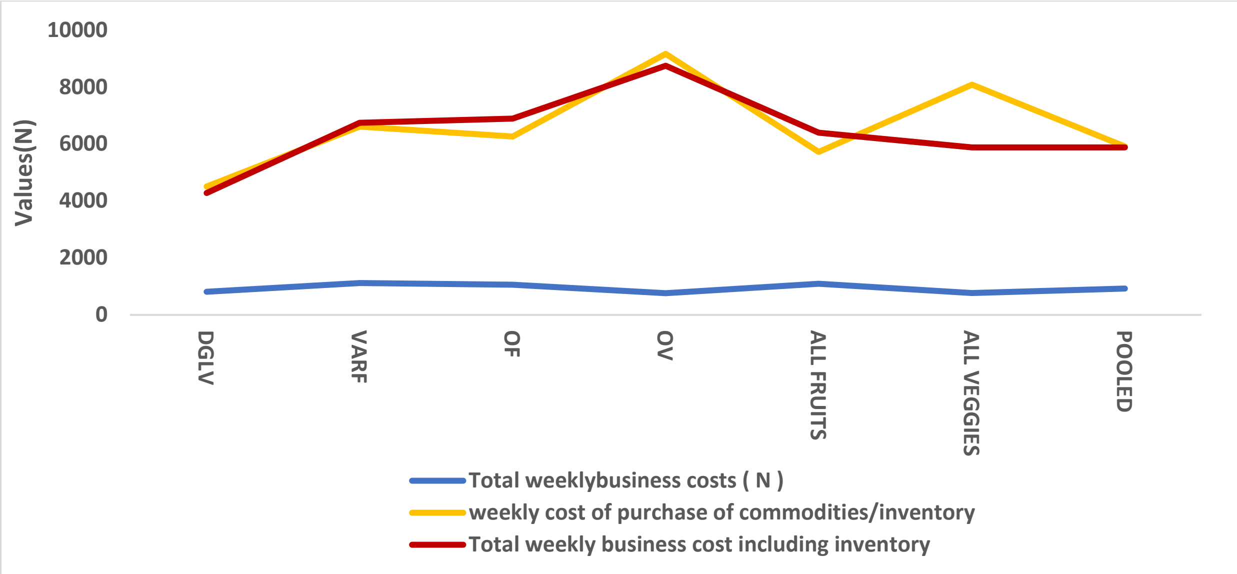


Figure 6: Cost of Goods Sold in Fruit and Vegetable Retailing in Nigeria

Revenue streams in Fruit and Vegetable Retailing

With regards to revenue generation, the average volume sold per week was 358.77kg at N73 per kg; with estimated revenue of N4964.85 for the overall retail sample. Fruit and vegetable retailers had revenues of ₦ 5, 198.78 and ₦ 5, 155.73, respectively. Weekly revenue streams across specific product categories were estimated as ₦4, 093.6, ₦5,365.08, ₦5, 379.87, and ₦7, 088.89, respectively for DGLV, VARF, OF and OV retailers, (See Figure 7).

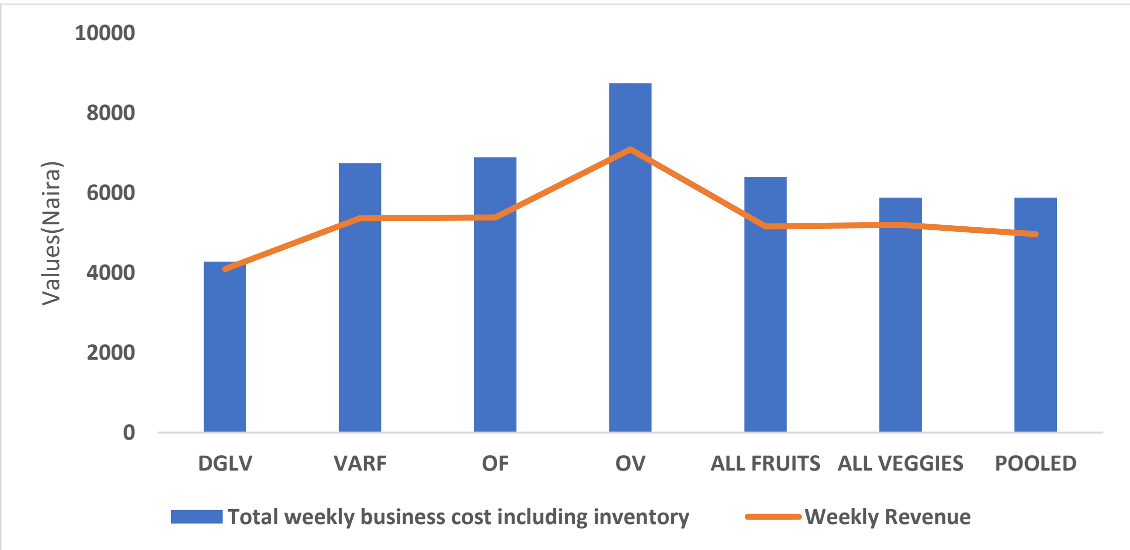


Figure 7: Total Variable Cost and Revenue Streams across Fruit and Vegetable Product Categories

Estimation of Profit and Profitability Indices in Fruit and Vegetable Retailing

Retailers were requested to estimate their weekly profit per KG of fruits/vegetables sold. The results (Table 6) revealed a reported profit of ₦1,200 per kg with fruits and vegetable retailers reporting ₦1,104.16 and ₦1,130.79, respectively. It is however interesting to note that the reported profit per KG was significantly higher than the estimated profit.

Following from the estimated weekly business costs ad revenue, we estimate the weekly profit to fruit and vegetable retailing in the study. Our findings show a loss estimated of -₦94/kg. It was unexpected that fruit retailers would have much higher losses (₦116.93) than vegetable retailers (₦82.89); when the higher business cost outlay is put into consideration. The least loss was witnessed among DGLV retailers (₦52.8).

Table 6: Business Costs and Profit Outlay of Fruit and Vegetable Retailers in Nigeria

	DGLV	VARF	OF	OV	All fruits	All vegetables	All
Observations							180
Business labor							
Permanent workers	0	0	0	0	0	0	0
Daily workers	1	1	1	1	1	1	1
Other workers	0	0	0	0	0	0	0
No. family member working in the shop/stall	2.51	2.26	2.16	2.36	2.19	2.4	2.3
Share of traders having family members a trader%	30(32.26)	25(37.88)	31(39.74)	24(34.78)	37(38.54)	44(33.33)	64(35.36)
Business costs and other information							
Total weekly business costs (₦)	808.93	1118.26	1053.83	761.69	1088.89	762.59	921.41
Total monthly business costs (₦)	3235.7	4473.02	4215.3	3046.77	4355.56	3050.37	3685.62
weekly cost of purchase of commodities/inventory	4504.84	6606.91	6257.15	9162.48	5725.1	8082.27	5911.77
Total weekly business cost including inventory	4277.91	6739.97	6889.27	8745.43	6398.61	5878.67	5878.82
Weekly Revenue	4093.6	5365.08	5379.87	7088.89	5155.73	5198.78	4964.85
Profit per KG (₦ thousands)	-52.8	-116.74	-116.48	-98.61	-116.93	-82.89	-94.61
Profit per KG (₦ thousands):SELF REPORTED	1205.41	931.92	1153.47	1036.64	1104.16	1130.79	1200.46
Share of retailers who sell organic vegetables/fruits (%)	25(26.88)	13(19.70)	10(12.82)	10(14.49)	14(14.58)	28(21.21)	35(19.44)
Mark-up for organic commodities(%)	30.6	28.27	20	39	26.25	29.46	26
Share of retailers who sell safe/clean vegetables/fruits (%)	NA						
Mark-up for safe/clean commodities(%)	NA						

SECTION 2

NEIGHBOURHOOD FRUIT AND VEGETABLE RETAILERS

A similar analysis was also conducted for fruit and vegetable retailers in the two focal neighborhoods. These tended to be smaller scattered standalone stalls along traffic routes or retailers selling out of their homes. The discussion in this section will closely follow the main market discussion for easy comparison.

Product Categorisation in Neighbourhood Markets

Among neighborhood vendors, vegetable retailers formed the bulk of the sampled respondents (94.2%), with DGLV and OV products making up 72% and ~70%, respectively(Figure 8). Fruit retailers made up 45% of the neighborhood retailers, disaggregated between VARF and OF as 22% and 41.9%, respectively. We found that the same pattern was followed across the two neighbourhoods with vegetable retailers being the majority. This may be an indication that vegetable consumption is higher than fruit consumption in the study area;

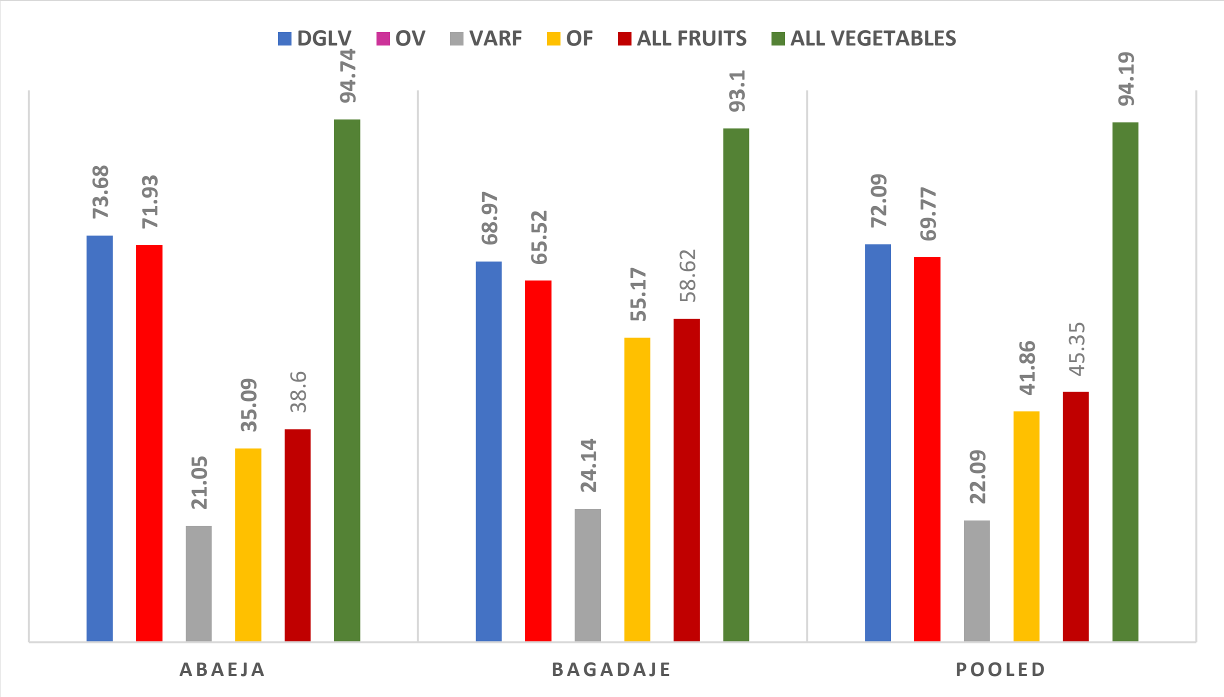


Figure 8: Percentage Distribution of Retailers in the Focal Neighborhoods by Product Categories

Description of Fruits and Vegetable Retailers Across Product Categories in Neighbourhood Markets

A description of retailer socio-demographic characteristics across product categories is presented in Table 7. The average age of neighbourhood retailers was 45 years, with the oldest being in the OV categories at 46 years old. There was once again female dominance in the neighbourhood markets with ~99% female participation, and ownership. All neighbourhood retail enterprises are self-funded by retailers with at least 8 years of experience across product categories.

Only about 14% of the retailers cropped their produce in the past year; while about 16% sold in other locations apart from the neighbourhood surveyed. A high proportion (73%) of the neighbourhood retailers reported having other sources of income; an indication that neighbourhood fruit and vegetable retailing may not provide enough revenue to serve as a sole source of income.

Table 7: Description of Fruits and vegetable Retailers in Neighbourhood markets

VARIABLE	DGLF(N=62)	VARF(N=19)	OF (N=36)	OV (N=60)	All Fruits(N=39)	All Vegetables (N=81)	ALL (N=86)
Age(years)*	45.18(11.09)	45.79(8.41)	44.67(9.17)	45.67(11.05)	44.74(8.81)	45.07(11.12)	45.03(11.0)
SEX							
Male	1(1.61)	0	0	1(1.67)	0	1(1.23)	1(1.16)
Female	61(98.39)	19(100)	36(100)	59(98.33)	39(100)	80(98.77)	85(98.84)
OWNER(% Yes)	61(98.39)	19(100)	36(100)	60(100)	39(100)	80(98.77)	85(98.84)

Sex of owner							
Male	1(1.64)	0	0	1(1.67)	0	1(1.25)	1(1.18)
Female	60(98.36)	19(100)	36(100)	59(98.33)	39(100)	79(98.75)	84(98.82)
Respondent funds	62(100)	19(100)	36(100)	60(100)	39(100)	81(100)	86(100)
SEX of funder							
Male	1(1.61)	0	0	1(100)	0	1(100)	1(100)
Female	61(98.39)	19(100)	36(100)	59(100)	39(!00)	80(100)	85(100)
Crop product in past year (% yes)	8(12.90)	1(5.26)	7(19.44)	6(13.33)	7(17.95)	11(13.58)	12(13.95)
Years of experience*	8.34(6.22)	8.71(5.96)	8.22(6.19)	8.18(6.24)	8.21(6.00)	8.09(6.07)	8.10(6.03)
Sells in other location	10(16.13)	4(21.05)	6(16.67)	9(15.00)	6(15.38)	13(16.05)	14(16.28)
Other businesses							
Yes	44(70.97)	14(73.68)	28(77.78)	45(75.00)	31(79.49)	59(72.84)	63(73.26)
No	18(29.03)	5(26.32)	8(22.22)	15(25.00)	8(20.51)	22(27.16)	23(26.74)

Functional Status of Retailers in Neighbourhood Markets

Retailers who Sold Own Produce

About two-third of the retailers who cropped their produce sold from own production, with all VARF retailers selling from their farm produce and 57% of OF retailers doing the same. Overall, 57% of fruit and 67% of vegetable retailers who cropped their produce sold them.

Table 8: Functional Status of Neighbourhood Retailers of Fruits and Vegetables

	DGLVegetables	**VAR Fruits**	**other fruits**	**Other Vegetables**	**All fruits**	**All vegetable**	**All**
Observations	62	19	36	60	39	81	86
<u>Transaction Characteristics</u>							
Share of retailers who sell their own production	6(75.00)	1(100)	4(57.14)	6(75.00)	4(57.14)	8(72.73)	8(66.67)
<u>Purchasing Volume per season (KGS)</u>							
Weekly volume in high season (HS)	182.17	219.28	180.94	135.53	201.75	169.68	166.66

Weekly volume in HS (5 years ago)	402.29	229.72	246.31	152.64	238.11	345.93	246.4
Weekly volume in low season (LS)	134.84	107.37	94.77	94.92	109.74	120.03	112.78
Weekly volume in LS (5 years ago)	309.9	112.73	80.78	88.41	88.39	260.15	180.4
Minimum and Maximum Sold Volume (KGS)							
Maximum weekly volume sold in HS	230.73	265.77	221.77	159.68	244.86	209.26	196.62
Minimum weekly volume sold in HS	89	121.18	71.86	77.6	91.66	85.17	75.64

Historical Outlay in Purchase and Sales

In comparing historical sales figures, the weekly volume purchased reduced significantly between the present period and the previous 5 years recall. Volume purchased 5 years ago was at least greater than present purchase by 80Kg during the high season. This pattern was similar across all product categories(see Figure 9), with the highest differences in inventory purchase when compared with 5 years ago among the DGLV retailers (220kg) and least among the VARF retailers(10kg).

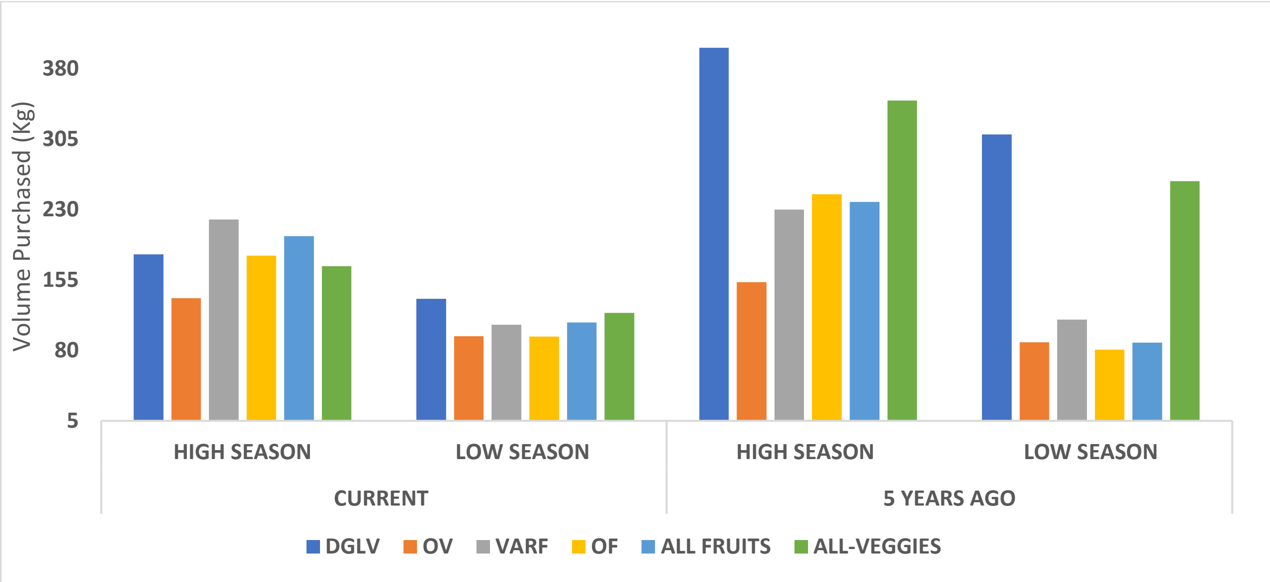


Figure 9: Historical Outlay of Inventory Purchase across Neighbourhood retailers

Minimum and maximum weekly sales presented in Figure 10, shows that fruit retailers had higher sales than vegetable retailers. Specifically, fruit retailers had the highest maximum weekly sales at 245kg(VARF-266KG and OF-222KG), while vegetable retailers averaged 209kg maximum sales per week (DGLV-231kg; OV-160kg). Minimum weekly sale was on the average estimated at 76kg for the pooled sample, with the vegetable retailers averaging 85kg and fruit retailers reporting 92kg. Differences in sales reported as maximum and minimum are dependent on business cycles, seasonality, and other demand/supply shifters.

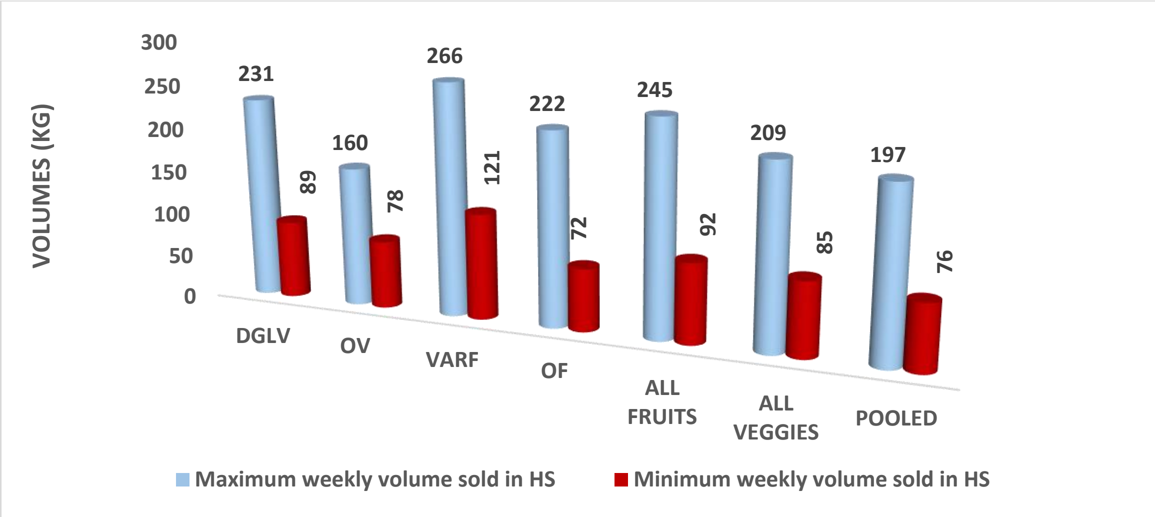


Figure 10: Minimum and Maximum Weekly Sales in Neighbourhood Retailing

Retailer and Supplier Nexus in Neighbourhood Markets

In this section, we explore major suppliers, services to and from suppliers, as well as inventory complaints.

Current Stock of Inventory (Volume purchased)

Current inventory purchased by neighbourhood retailers was estimated at 323.41kg at ₦75.96/kg, almost double the reported inventory purchased in high season (Table 9). This value reflects a high supply of fruits and vegetables in the markets. While vegetable retailers had estimated inventory purchase of 333.51kg at N76.71/KG; fruit retailers purchased 179.8kg at N55.93. Again, we see that the unit price of fruits is lower than that of vegetables in the market. This may be connected to the availability of high-volume vegetables (onion, red-bell peppers and garden eggs) during the period of this survey.

Main Suppliers

Apart from supplies from own production, (Table 9), the main origin of supplies (see figure 11) for neighbourhood retailers was directly from farmers (86%), similar to that obtained with retailers in the main markets. Wholesalers serviced 45%, while rural brokers supplied 10% of the fruits and vegetables retailed in neighborhoods. All the neighbourhood fruit retailers received supplies directly from farmers, while more vegetable retailers (47%) received from wholesalers. This may reflect the fact that retailers (both in the main markets and neighbourhood markets) are able to obtain their better supplies in terms of quantity and prices from farmers and likely rural brokers.

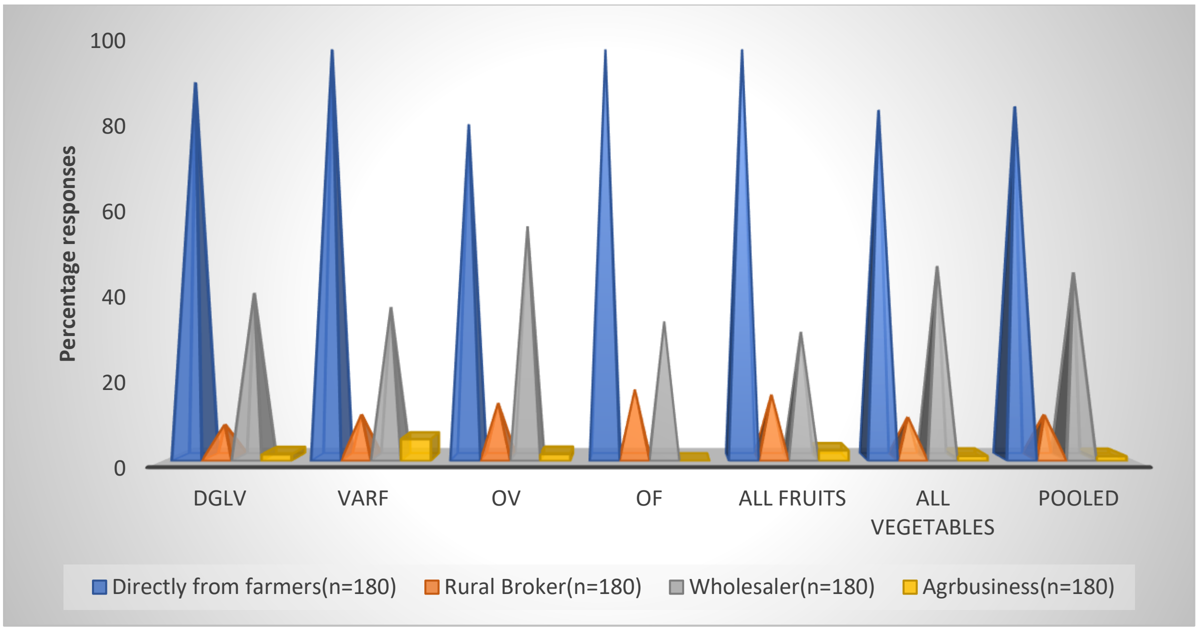


Figure 11: Origin of Supplies to Neighbourhood Fruit and Vegetable Retailers

On average, the neighbourhood retailers had 45 suppliers; with DGLV retailers reporting the highest at 52; and the least being from OV retailers. However, regular suppliers were at best a third of the total number of suppliers (14), spread across DGLV, VARF, OF and OV as 16, 19, 14 and 13, respectively.

Table 9: Relationship between Retailers and Suppliers of Neighbourhood Fruit and Vegetables Vendors

Retailers and Suppliers	DGLV(74)	VARF	OF	Other Vegetables(62)	all fruit	All veggies	All
Observations							
Weekly volume NOW (KGS)	387.31	195.46	175.76	121.73	179.8	333.51	323.41
Price per KG (N)	65.19	39.91	56.4	89.16	55.93	76.71	75.96
Origin of supply (%)							
Own production(n=8)	6(75)	1(100)	4(57.14)	6(75)	4(57.14)	8(72.73)	8(66.67)
Directly from farmers(n=180)	57(91.94)	19(100)	36(100)	49(81.67)	39(100)	69(85.19)	74(86.05)
Rural Broker(n=180)	5(8.06)	2(10.53)	6(16.67)	8(13.33)	6(15.38)	9(9.88)	9(10.47)
Wholesaler(n=180)	25(40.32)	7(36.84)	12(33.33)	34(56.67)	12(30.77)	38(46.91)	39(45.35)
Agribusiness(n=180)	1(1.61)	1(5.26)	0.0	1(1.67)	1(2.56)	1(1.23)	1(1.16)
Importer(n=180)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transaction characteristics							
Share of retailers who buy product sorted (%), N=86	22(35.48)	8(42.11)	16(44.44)	25(42.37)	17(43.59)	30(37.50)	32(37.65)
Share of retailers who keep written records of purchase (%), N=3	2(3.23)	1(5.26)	2(5.56)	3(3.39)	2(5.13)	3(3.75)	3(3.53)
Share of retailers who have any agreement with suppliers (%), N=86	2(3.23)	0.0	1(2.78)	0.0	1(2.56)	2(2.50)	3(3.53)
Number of suppliers (frequency)	52.6	43.9	42.7	41.4	43.4	47.6	45.3
Number of regular suppliers(frequency)	15.6	18.8	14.2	13.4	14.7	14.1	13.8
Services PROVIDED to suppliers (%)							
No service provided	40(64.52)	13(68.42)	24(66.67)	39(65)	27(69.23)	52(64.20)	56(65.12)
Advancement of money	0	0	0	0	0	0	0
Inputs	0	0	0	0	0	0	0
Harvests	0	0	0	0	0	0	0
Own transport	14(22.58)	5(26.32)	9(25.00)	13(21.67)	9(23.08)	19(23.46)	19(22.09)
Transportation arrangements	9(14.52)	1(5.26)	2(5.56)	6(10.00)	2(5.13)	9(11.11)	9(10.47)
Services RECEIVED by suppliers (%)							
No service received	54(87.10)	18(97.74)	32(88.89)	51(85.00)	35(89.74)	69(85.19)	74(86.05)
Delivery in stall	2(3.23)	1(5.26)	3(8.33)	2(3.33)	3(7.69)	3(3.70)	3(3.49)
Sorting	1(1.61)	0	2(5.56)	2(3.33)	2(5.13)	2(2.47)	2(2.33)
Sales on credit	1(1.61)	0	0	1(1.67)	0	1(.23)	1(1.16)
Packaging	10(16.13)	3(15.79)	7(19.44)	11(18.33)	7(17.95)	15(18.52)	15(17.44)
Cleaning	1(1.61)	0	1(2.78)	0	1(2.56)	1(1.23)	1(1.16)

Other	-	-	-	-			-
Share of retailers who received complaints from suppliers over the past 12 months (%)							
Yes	27(43.55)	8(42.11)	15(41.67)	23(38.33)	17(43.95)	31(38.27)	31(36.05)
No	35(56.45)	11(57.89)	21(58.33)	37(61.67)	22(56.41)	50(61.73)	55(63.95)
Reason of complaint (%)							
Dirty product	0	0	0	0	0	0	0
Variety	0	0	0	0	0	0	0
Color	5(8.06)	1(5.26)	1(2.78)	4(6.67)	1(2.56)	5(6.17)	5(5.81)
Size	5(8.06)	2(10.53)	2(5.56)	3(5.00)	2(5.13)	5(6.17)	5(5.81)
Firmness	4(6.45)	2(10.53)	1(2.78)	4(6.67)	2(5.13)	4(4.94)	4(4.65)
Lack of volume in the box	4(6.45)	1(5.26)	1(2.78)	4(6.67)	2(5.13)	5(6.17)	5(5.81)
Rottenness	8(12.90)	2(10.53)	7(19.44)	7(11.67)	7(17.95)	10(12.35)	10(11.63)
Bruised	4(6.45)	2(10.53)	1(2.78)	3(5.00)	3(7.69)	5(6.17)	5(5.81)

Transactional Characteristics in Retailer-Supply Relationship

In terms of best practices in business relationships, we examined retailers with respect to purchase of quality (sorted) inventory, contractual agreements and record keeping. The results (Table 9) showed a below average (~38%) response regarding purchase of sorted products. This seemed to be more relevant to fruit retailers (44%) than for vegetable retailers.

Very few retailers had contractual agreements with their suppliers (3.5%), distributed as 2.5% and 2.6% for fruit and vegetable retailers, respectively. Also, only 3.5% of the neighbourhood retailers kept records of purchase with suppliers. Similar to the results obtained from retailers in the main market, this is further an indication of an informal commodity market, with retailers exhibiting low literacy levels.

Services Provided to and Received from Suppliers

Neighbourhood retailers seemed to have too low volume of transactions to provide services to suppliers; with up to 65% not providing any services (Table 9). The main service provided were related to transportation (22%). Also, suppliers mainly did not provide services to the retailers (86%). The main services provided were in form of packaging (10%). The independent nature of the small volume neighborhood retailer made it impossible to take advantage of economies of scale, thus they were unable to either receive special services from their suppliers to provide such services to the suppliers in return.

Quality Complaints Made by Retailers to Suppliers

We see that quality complaints remained relatively low even for neighborhood vendors as reported by only 36% of the retailers. With less than 40 % retailers purchasing sorted products, it is not unsurprising that a similar proportion reported complaints While, this may suggest purchase of good quality products, it becomes imperative to review standardization and feedback mechanisms in fruits and vegetables markets in Nigeria.

The main quality complaints were related to rotten products (11.6%); with up to 18% of fruit retailers and 12% of vegetable retailers reporting this. The next was related to firmness (4.7%), with equal proportion of reporting among fruits and vegetable sellers (5%).

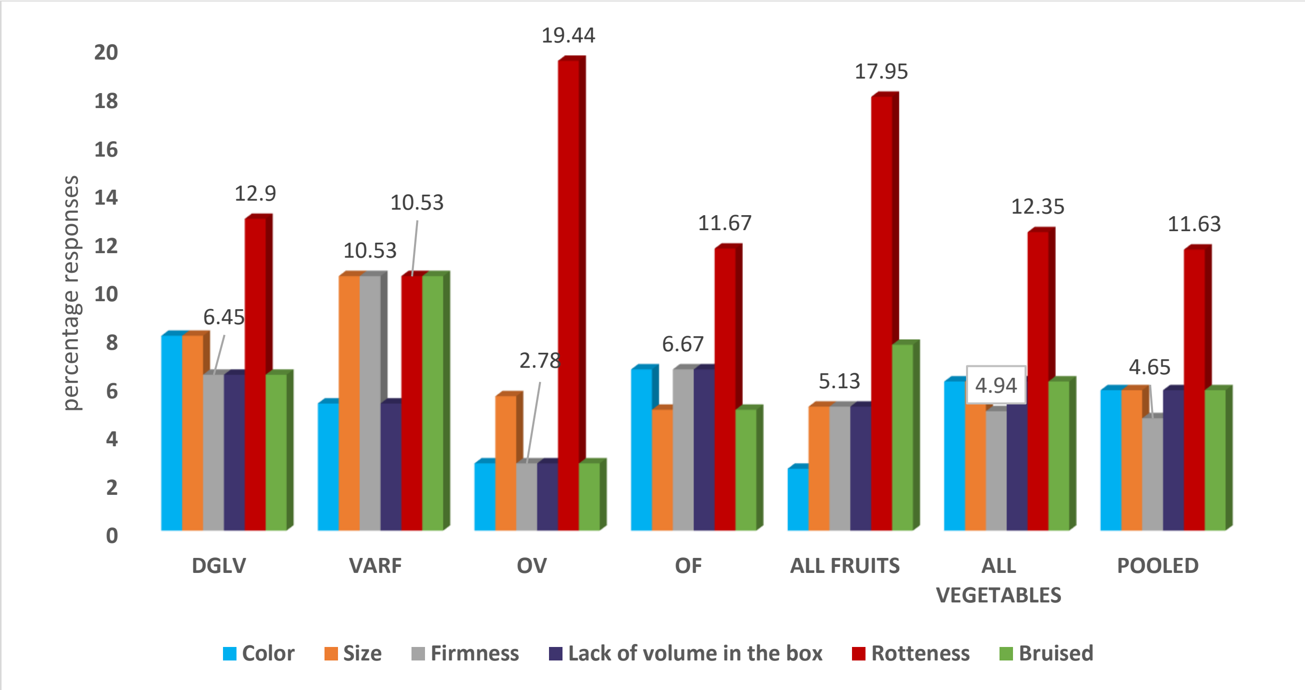


Figure 12: Retailer Complaints to Suppliers

Retailer-Buyer/Client Nexus in Neighbourhood Markets

In this section, we examine the relationship between the fruits and vegetable retailers and their buyers(customers), including estimated volume of sales, main clients, services and quality complaints (Table 10).

Current Weekly Sales

Average weekly sales of fruits and vegetables at the time of this survey was estimated at 89.6kg at N78.8. Fruit retailers had higher sales at 90kg; while vegetable retailers sold an average of 86.6kg.

Main Clients (Buyers) in Neighbourhood Markets

Fruits and vegetables in the neighborhoods are mainly sold directly to consumers(96%) with minimal sales to Ambulant vendors/hawkers (8%) and other traditional retailers (6%)- See Figure 13. The average number of clients served in the past year was estimated at 1256, with only about 44 of them regarded as regular clients.

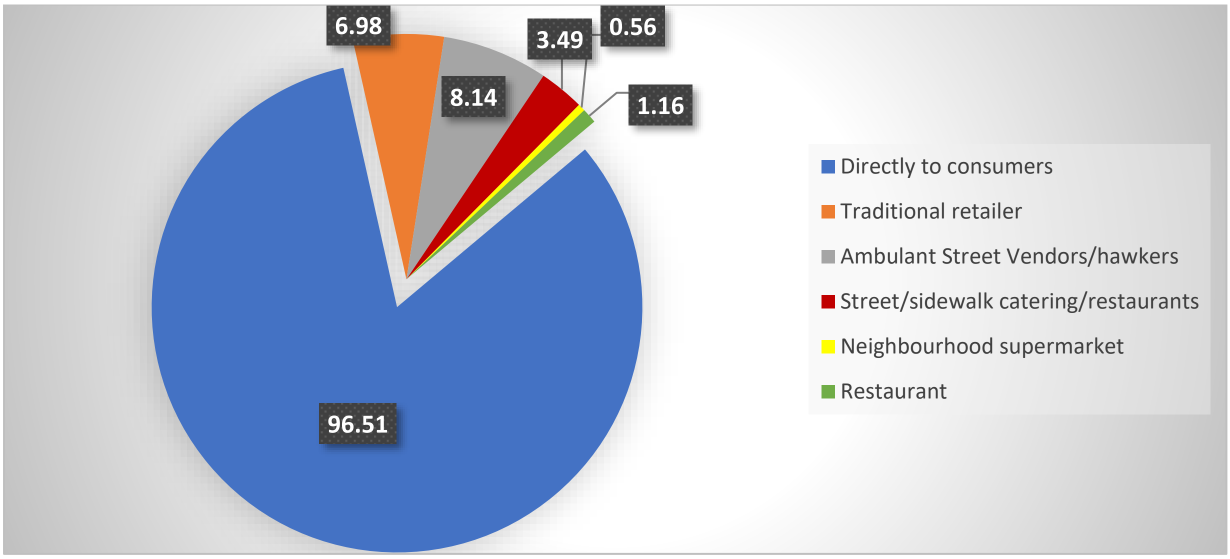


Figure 13: Percentage Distribution of Main Clients of Neighbourhood Fruit and Vegetable Retailers

Transactional Characteristics of Fruits and Vegetable Retailers in Neighbourhood Markets

An indication of value addition and a more personal relationships with clients is seen among the neighbourhood retailers; with respect to sorting of products (Table 10). More than 50% of the retailers sorted their commodities before selling to clients. This was again more prevalent among fruit retailers (59%) than vegetable retailers (48%), similar to what was found among the retailers in the main markets.

While none of the retailers in the neighbourhood markets kept records of sales, at least 13% had an agreement with the clients. These agreements have been reported as important in planning inventories and sales in order to maximize profits(Saraiya et al., 2013) in a supply chain system.

Table 10: Retailer-Client Nexus in Fruits and Vegetable markets in Oyo State, Nigeria

	DGLV	VARF	OF	Other Vegetables	all fruits	all veggies	All
Observations	93	66	78				180
Weekly volume NOW (KGS)	89.47	70.24	88.09	68.42	90.02	86.66	89.61
Price per KG (N thousands)	62.89	38.56	34.25	99.24	35.02	81.85	78.8
Clients (%)							
Directly to consumers	59(95.16)	19(100)	36(100)	60(100)	39(100)	78(96.30)	83(96.51)
Traditional retailer	4(6.45)	2(10.53)	3(8.33)	3(5.00)	3(7.69)	5(6.17)	6(6.98)
Ambulant Street Vendors/hawkers	5(8.06)	2(10.53)	2(5.56)	4(6.67)	3(7.69)	7(8.64)	7(8.14)
Street/sidewalk catering/restaurants	3(4.84)	0.0	0.0	0.0	0.0	3(3.70)	3(3.49)
Neighbourhood supermarket	1(1.08)	0.0	0.0	1(1.45)	0.0	1(0.76)	1(0.56)
Restaurant	0.0	1(5.26)	1(2.78)	1(1.67)	1(2.56)	1(1.23)	1(1.16)
Transaction characteristics							
Share of retailers who sell product sorted (%)	27(43.55)	11(57.89)	21(58.33)	31(51.67)	23(58.97)	39(48.15)	44(51.16)
Share of retailers who keep written records of sell (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Share of retailers who have any agreement with buyers (%);	10(16.33)	1(5.26)	2(5.56)	10(16.67)	3(7.69)	12(14.81)	12(13.95)
Number of clients	1258.6	2089.3	1494.7	1106.8	1622.1	1310.7	1256.0
Number of regular clients	45.2	64.9	54.9	42.2	55.9	44.1	43.9
Services PROVIDED to clients (%)							
No service provided	46(74.19)	13(68.42)	26(72.22)	43(71.67)	27(69.23)	56(69.14)	60(69.77)
Discount over prices	23(37.10)	11(57.89)	16(44.44)	21(35.00)	18(46.15)	30(37.04)	31(36.05)
Volume discounts	23(37.10)	12(63.16)	18(50.00)	25(41.67)	20(51.28)	34(41.98)	35(40.70)
Sales on credit	8(!2.90)	2(10.53)	4(11.11)	7(11.67)	4(10.26)	10(12.35)	10(11.63)
Packing	9(14.52)	3(15.79)	7(19.44)	10(16.67)	7(17.95)	14(17.28)	14(16.28)
Special sorting	2(3.23)	0	0	3(5.00)	0	3(3.70)	3(3.49)
Share of retailers who received complaints from buyers over the past 12 months (%) (n=176)							
Yes	9(14.52)	2(11.11)	4(11.43)	51(85.00)	5(13.16)	11(13.58)	12(14.12)
No	53(85.48)	16(88.89)	31(88.57)	9(15.00)	33(86.84)	70(86.42)	73(85.88)
Reason of complaint (%)							
Dirty product	0	0	0	0	0	0	0
Variety	1(1.61)	0	0	1(1.67)	0	1(1.23)	1(1.16)
Color	6(9.68)	2(10.53)	1(2.78)	6(10.00)	2(5.13)	7(8.64)	7(8.14)
Size	3(4.84)	2(10.53)	3(8.33)	4(6.67)	3(7.69)	4(4.94)	4(4.65)
Firmness	8(12.90)	2(10.53)	5(13.89)	10(16.67)	5(12.82)	10(12.35)	10(11.63)
Lack of volume in the box	0	0	0	0	0	0	0
Deterioration/rottenness	3(4.84)	0	0	2(3.33)	0	3(3.70)	3(3.49)
Bruised	2(3.23)	1(5.26)	1(2.78)	2(3.33)	2(5.13)	2(2.47)	2(2.33)
Other	1(1.61)	0	0	0	0	1(1.23)	1(1.16)

Service Provided to Clients by Neighbourhood Retailers

Again, a large percentage of the retailers (~70%) did not provide any service beyond selling to their clients (Figure 14). However, among those who did, the most popular service provided was volume discount (41%) and price discounts (36%). The least service offered by the retailers was in the aspect of special sorting; another indication of low value addition in the agricultural commodity markets.

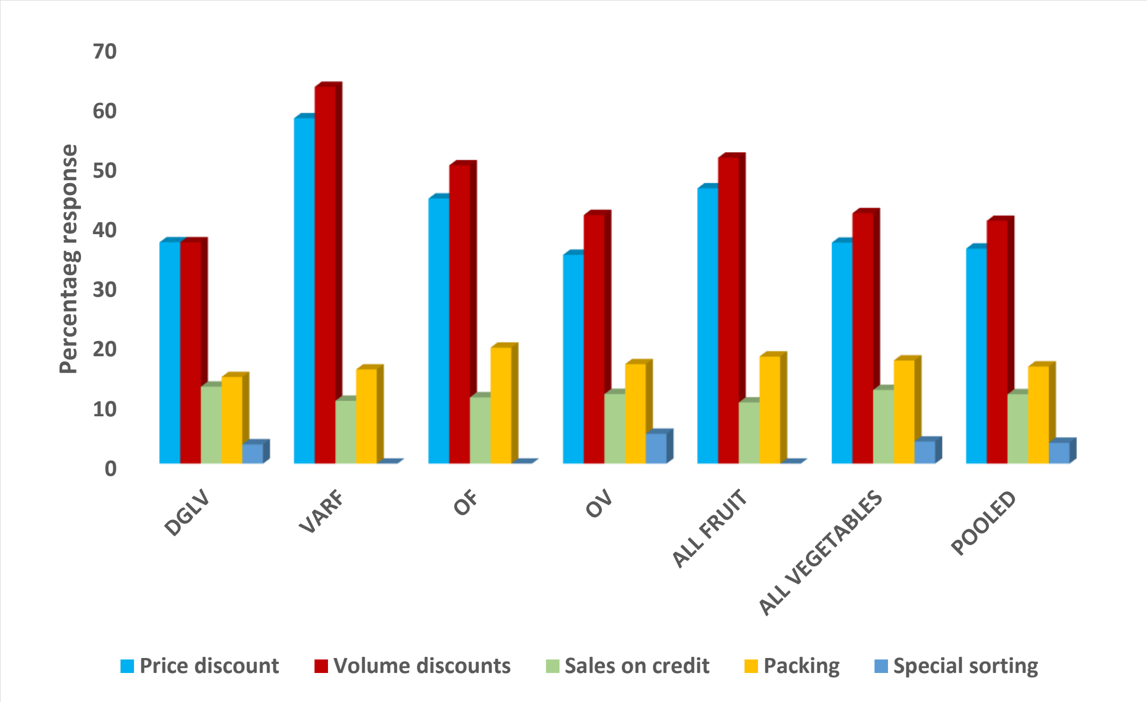


Figure 14: Percentage Distribution of Neighbourhood Retailers Across Service Provided to Clients

Quality Complaints from Clients to Retailers in Neighbourhood Markets

Similar to findings in the markets, quality complaints in the neighborhood retailing systems received from clients was low (14%) (Table 10). The most important complaint seems to be related to firmness of the commodity (Figure 15); an indication of freshness. This again was especially relevant to the fruit retailers with 12.8% response to this issue. The most important complaints made to vegetable retailers was with respect to the colour of the vegetables (8.6%).

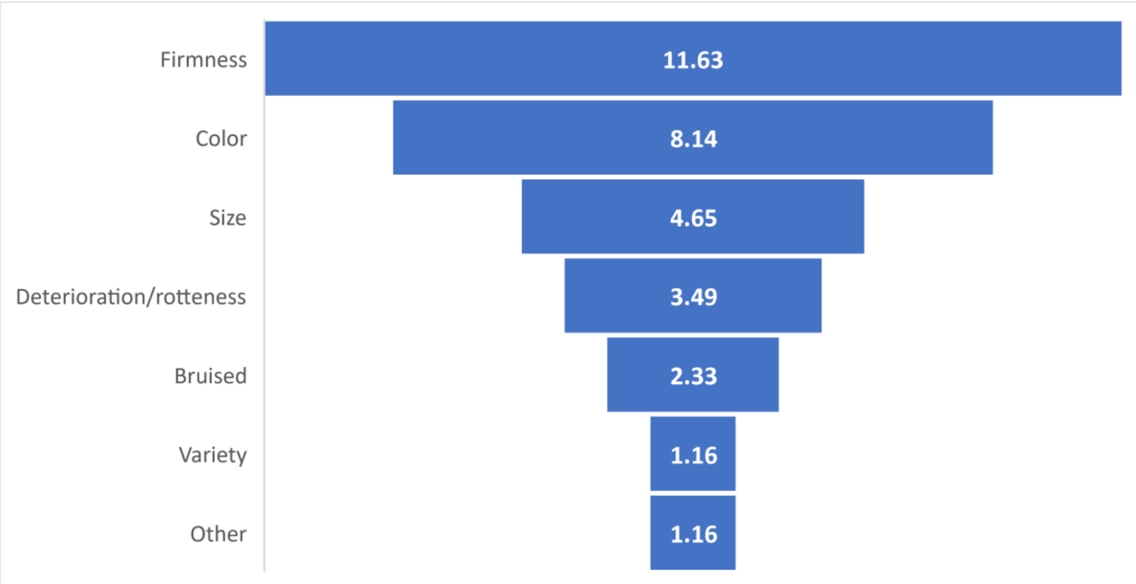


Figure 15: Percentage Distribution of Neighbourhood Retailers by Quality Complaints made by Clients

Assets Outlay of Neighbourhood Fruit and Vegetable Retailers

Physical and productive assets in fruits and vegetable retailing in Neighbourhood markets are examined in this section. Specifically, results are presented on location of enterprise, types of assets and market values of these assets.

Location of Fruit and Vegetable Retailers

The types of sales location for neighbourhood retailers were more limited than was obtained in the main markets (Figure 16). Location characteristics of fruits and vegetable retailers show that most neighbourhood retailers had some form of stall for their enterprise(40%), followed by those who used their home premises for their businesses (26%), while the use of permanent tables was found among 24% of the retailers. Fruit retailers were more likely to have stalls(~59%) than vegetable retailers (~40%); while selling in home premises was a higher likelihood for vegetable retailers (27%) than fruit retailers (20.5%).

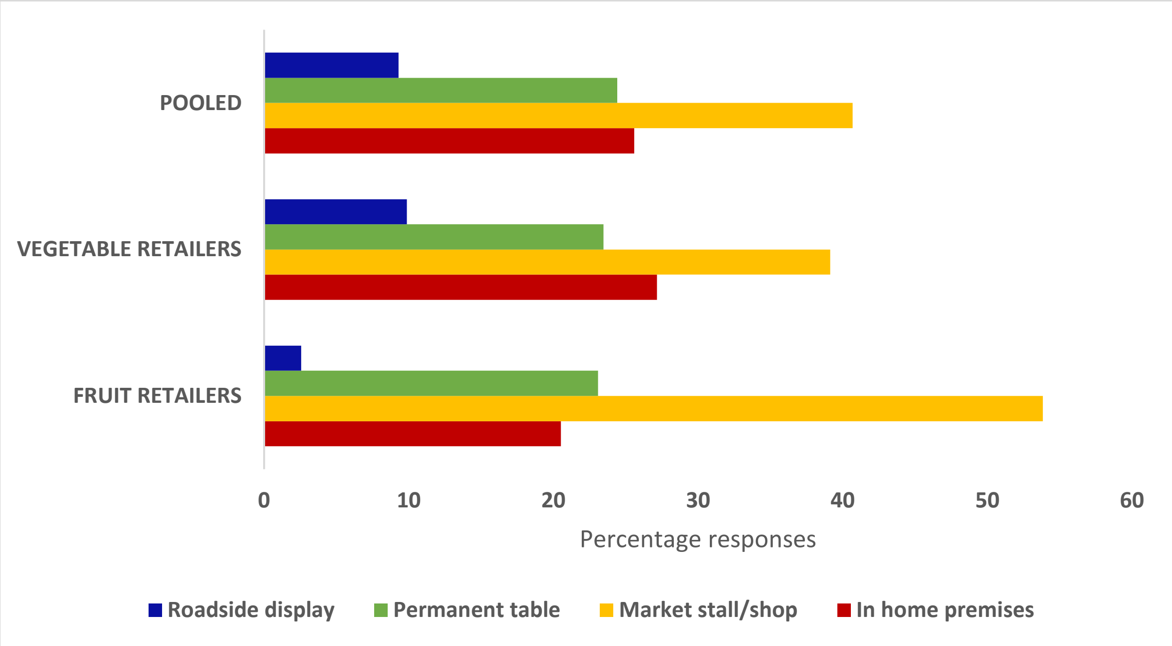


Figure 16: Percentage Distribution of Retailers by Location

Types and Value of Assets owned by Neighbourhood Retailers

The most common assets owned (Table 11) by the retailers were display items (90.5%), benches/stools(80%), phones (75%) and can baskets (70%). Lamps and stores were owned by 54% and 52%, respectively. High valued assets such as refrigerator and means of transportation (Motorcycle) were reported by only 2.3% and 1.2% of the retailers. This again speaks to the preponderance of low-level resource, and low technology agricultural commodity marketing in Nigeria, with consequences for economies of scale, standardization, and opportunity for expansion.

On average, these assets were valued at ₦11, 370 across fruit and vegetable retailers. Specifically, fruit retailers had higher assets value at ₦ 15, 659.62 (VARF;₦ 10, 009.21 and OF;₦ 16, 078.47); while the value of assets owned by vegetable retailers was ₦10, 397.56(DGLV;₦10, 160.33and OV;₦9, 718.42)[2].

[2] Based on exchange rate of N400 to a dollar, average value of neighbourhood retailer assets was lower than market assets, ranging from $25 to about $40.

Table 11: Assets Outlay of Neighbourhood Retailers

	DGLV	VARF	OF	Other Vegetables	All fruits	All vegetables	All
Observations							
1) Location of stall/shop of retailers							
In home premises	18(29.03)	2(10.53)	7(19.44)	14(23.33)	8(20.51)	22(27.16)	22(25.58)
Market stall/shop	24(38.71)	12(63.16)	19(52.78)	26(43.33)	21(53.85)	32(39.51)	35(40.70)
Permanent table	12(19.35)	4(21.05)	9(25.00)	16(26.67)	9(23.08)	19(23.46)	21(24.42)
Roadside display	8(12.90)	1(5.26)	1(2.78)	4(6.67)	1(2.56)	8(9.88)	8(9.30)
Wheel barrow(stationary)	0	0	0	0	0	0	0
Hawker	0	0	0	0	0	0	0
Other							
2) Shares of retailers owning different type of assets:							
Cane basket	43(69.35)	18(94.74)	29(80.56)	43(71.67)	32(82.05)	57(70.37)	60(69.77)
Commercial Umbrella	5(8.06)	2(10.53)	3(8.57)	2(3.33)	3(7.89)	6(7.41)	6(7.06)
Wheel barrow(stationary)	0	0	0	0	0	0	0
Display items	55(88.71)	19(100)	33(94.29)	54(90.00)	36(94.74)	73(90.12)	77(90.59)
Motorcycle	0	0	1(2.86)	1(1.67)	1(2.73)	1(1.23)	1(1.18)
Tricycle	0	0	0	0	0	0	0
Micra(small vehicle)	0	0	0	0	0	0	0
Bus	0	0	0	0	0	0	0
Phone	46(74.19)	16(84.21)	29(80.56)	46(76.67)	31(79.49)	62(76.54)	65(75.58)
Lamp	37(59.78)	10(52.63)	17(47.22)	33(55.00)	20(51.28)	46(56.79)	47(54.65)
Store	33(53.23)	12(63.16)	23(63.89)	35(58.33)	25(64.10)	43(53.09)	45(52.33)
Benches/stools	50(80.65)	15(78.95)	29(80.56)	52(86.67)	31(79.49)	66(81.48)	69(80.23)
Refrigerator	1(1.64)	0	1(2.78)	1(1.67)	1(2.56)	1(1.25)	2(2.35)
Generator	0	0	0	0	0	0	0
Others	5(8.06)	2(10.53)	3(8.33)	7(11.67)	3(7.69)	7(8.64)	7(8.14)
6) Total value of business assets (₦ thousands);n=86)	10160.33	10009.21	16078.47	9718.42	15659.62	10397.56	11370

Business Costs and Profit Outlay among Neighbourhood Retailers

In this section, profitability of the retailers across product categories in neighbourhood fruit and vegetable retailing is examined, with emphasis on business costs, revenues, and estimated profitability of the system.

Labour Use in Fruit and Vegetable Retailing in Neighbourhood Markets

The results show that neighborhood retailers did not use hired labour in their activities(Table 12), but as in main markets, relied more on family for retail support, as at least 2 family members worked in the retail business daily. This suggests that neighbourhood retailing is more of a home based, sole ownership business (recall that it is 100% owned by respondents- Table 7). About 26% of these retailers had family members who also traded in fruits and vegetables; with the least being among VARF retailers (7%) and the highest among DGLV (19%). This may imply that vegetable retailing is easier than fruit retailing in terms of capital outlay (recall assets value) and may thus eases entry into the retailing space.

Business Costs and Returns

The total business costs- Costs of goods sold was again an addition of the cost of inventory and other variable inputs. The outlay is presented in Figure 17.

Variable inputs costs reported and estimated include electricity, fuel for generators, taxes, water, association fees, telephone, pest-control, and other miscellaneous expenses. Labour cost could not be included in the neighbourhood retailers' costs structure, since there was no paid labour use within the system. The estimated weekly business cost was therefore given at ₦516.49; distributed across DGLV, VARF, OF, OV retailers as ₦549.26, ₦527.06, ₦605.63 and ₦565.06.

Inventory costs was estimated as the cost of good purchased for sale within the week. This accounted for ₦ 4135.54 for all retailers. There was a higher cost of inventory among fruit retailers at ₦4536.41 (VARF; ₦5724.74 and OF;₦3997.78) than with vegetable retailers at ₦4131.41 (DGLV; ₦3845 and OV; ₦3997.78).

The total cost of goods sold was therefore estimated as ₦4514.41; across DGLV, VARF, OF and OV as ₦4292.47, ₦6252.37, ₦4468.5 and ₦4997.37. Again, fruit retailing had the higher business cost outlay cumulatively (₦5024.13) vegetable retailing (₦4514.41).

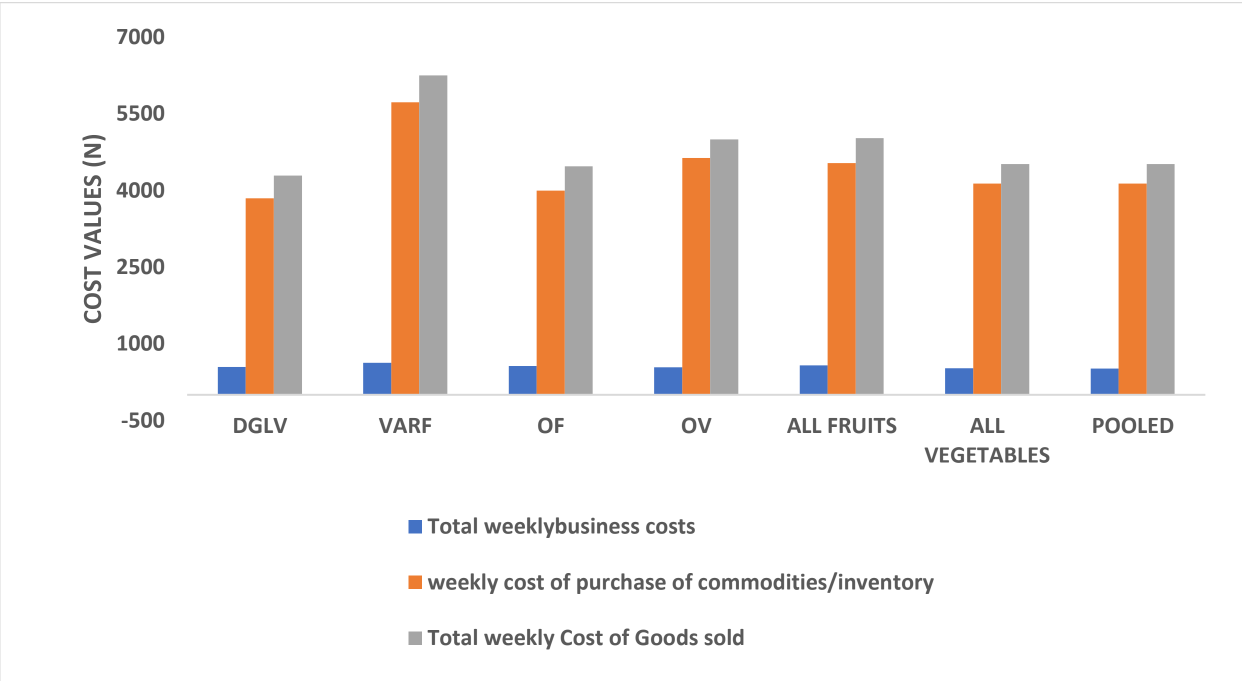


Figure 17:Weekly Costs of Business in Neighbourhood retailing

Revenue Outlay

The revenue was estimated as the quantity of commodities sold multiplied by its unit price. The overall average weekly revenue was estimated at ₦ 2136.62, with the highest revenue coming from fruit retail at ₦2172.47 (VARF and OF being ₦2840.61 and ₦1949.03, respectively). Vegetable retailers on the other hand had weekly revenue of ₦2128.51(DGLV; ₦1887.48 and OV; ₦2036.01).

As with market fruit and vegetable vendors, it is clear that neighborhood vendors are unable to operate profitably. Losses incurred per Kg of volume sold was estimated at ₦132.25 for the overall sample, with fruit and vegetable retailers incurring ₦78.54 and ₦134.68, respectively (table 12).

It is again interesting to note that there was a general perception of profit making among the retailers across all product types in the neighbourhood system just as in the main markets. Self-reported profit was ₦ 591.83 per week; with fruit retailers reporting higher profit of ₦620.86 versus ₦573.29, reported by vegetable retailers. This information, when combined with the levels of record keeping reported by vendors reveals a major gap in capacity among vendors that may inhibit their ability to conduct business on a larger scale.

Table 12: Business Cost and Revenue Outlays in Neighbourhood Markets

	DGLV	VARF	OF	Other Vegetables	All fruits	All vegetables	All
Business labor							
Daily workers	0	0	0	0	0	0	0
Family member working in the shop/stall	2.52	2.33	2.62	2.18	2.5	2.42	2.39
Share of traders having family members a trader%	19(30.65)	7(36.84)	11(30.56)	14(23.33)	12(30.77)	23(28.40)	26(30.23)
Labour cost per week	-	-	-	-	-	-	
Business costs and other information							
Total weekly business costs (₦)	543.98	626.56	564.87	536.61	576.4	521.03	516.49
Total monthly business costs (₦)	2175.93	2506.25	2259.49	2146.44	2305.59	2084.13	2065.98
weekly cost of purchase of commodities/inventory	3845	5724.74	3997.78	4633.16	4536.41	4131.41	4135.54
Total weekly business cost including inventory	4292.47	6252.37	4468.5	4997.37	5024.13	4514.41	4514.41
Weekly Revenue	1887.48	2840.61	1949.03	2036.01	2172.47	2128.51	2136.62
Weekly Profit (Reve-Cost)	-2404.99	-3411.76	-2519.47	-2961.36	-2851.66	-2385.9	-2377.79

Profit per KG (~~N~~ thousands)	**-135.05**	**-75.27**	**-80.68**	**-146.52**	**-78.54**	**-134.68**	**-132.25**
Profit per KG (~~N~~ thousands):SELF REPORTED	**549.26**	**527.06**	**605.63**	**565.06**	**620.86**	**573.29**	**591.83**

SECTION 3

DIFFERENCES IN FRUIT AND VEGETABLE RETAILING ACROSS MARKET TYPES

Are there differences in the various dimensions of fruit and vegetable retailing across the market types? This section explores the characteristics of fruit and vegetable retail across the main types of markets in the study (see Figure 2).

Functional Status of Retailers across Market Types

We discuss functional status of retailers in Table 13, including historical outlays of inventory purchase and sales.

While 94% of the retailers in Ojoo market sell their own produce, 85.7% of those in Moniya do the same. In the neighbourhood market, up to 83% sell their own produce while only 50% of them do so in Abaeja, neighbourhood market.

Table 13: Functional Status of Retailers across Market

	Moniya	Ojoo	ALL MAIN MARKET	Abaeja	Bagadaje	ALL NEIGHBOURHOOD
Transaction Characteristics						
Share of retailers who take possession	Na	na	na	na	Na	na
Share of retailers who sell their own production	6(85.71)	32(94.12)	38(92.68)	3(50.00)	5(83.33)	8(66.67)
Purchasing Volume per season (KGS)						
Weekly volume in high season (HS)	163.61	151.49	156.34	181.66	149.7	170.62
Weekly volume in HS (5 years ago)	215.94	160.53	182.44	255.59	476.82	336.36
Weekly volume in low season (LS)	100.34	68.79	81.48	136.03	87.18	119.74
Weekly volume in LS (5 years ago)	115.7	63.67	84.16	194.25	352	250.23
Minimum and Maximum Sold Volume (KGS)						
Maximum weekly volume sold in HS	299.72	243.55	266.27	207.72	203.45	206.21
Minimum weekly volume sold in HS	152.24	114.24	129.61	92.75	66.71	83.4

Historical Record of Fruit and Vegetable Retailing across Market Types

It is intuitive to expect that the main market would have higher purchase and sales volumes than the neighborhood vendors. However, our results show that purchase of inventory was higher among the neighborhood vendors than the main markets; but sales were higher in the main markets (figure 18). This may not be entirely strange as neighbourhood retailers are the main purchasers in the main markets, where they purchase inventory (goods to be sold). However, purchases made by retailers of the main markets are most likely for consumption, rather than for a re-sale.

Results again show higher inventory purchase in the past 5 years when compared to the current period. Main market estimation showed inventory purchase in high season of 182kg for the 5-year recall and 156.34kg in the current period. Low season purchase was estimated at 84.16kg and 81.48kg for the 5-year recall and current period, respectively.

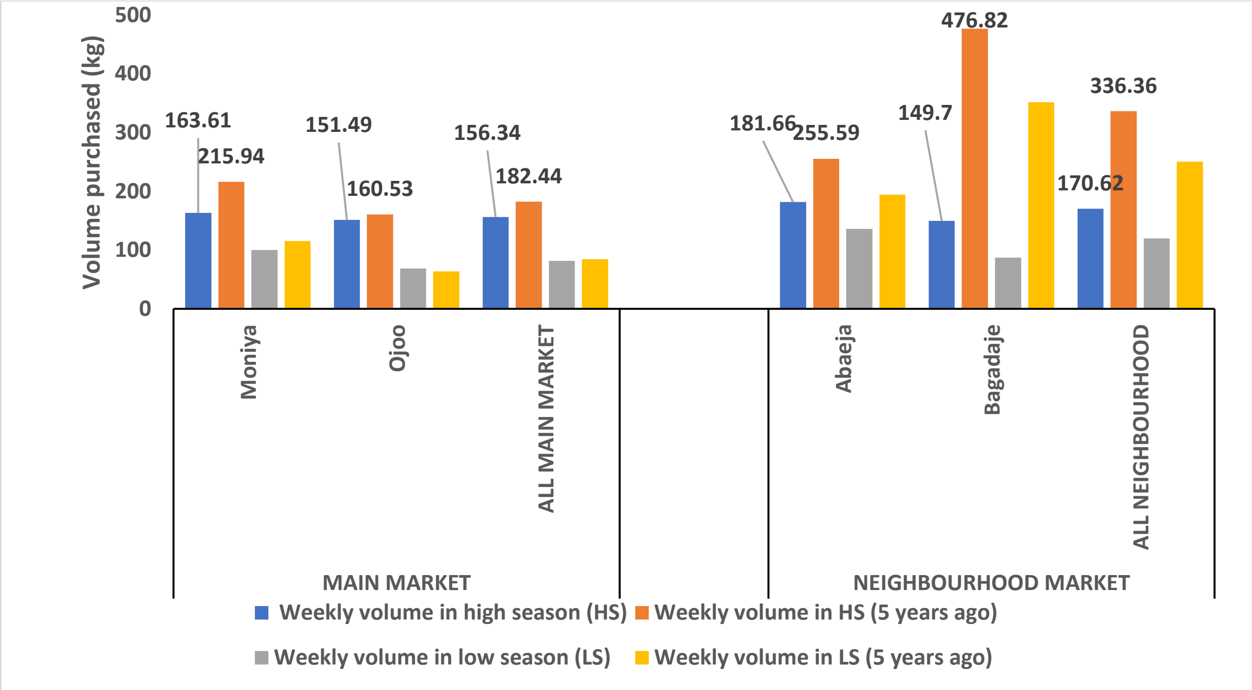


Figure 18: Historical Outlay of Fruit and Vegetable Retailing Across Market Types

Maximum and minimum weekly sales were estimated at 129.61kg and 266.27kg in the main market; while it was 83.4kg and 206.21kg in the neighbourhood market. Moniya market had the highest sales volume (152.24kg and 299.72kg for minimum and maximum values, respectively) while Ojoo market recorded minimum and maximum sales values of 114.24kg and 243.55kg, respectively. Minimum and maximum weekly sales in the neighbourhood markets were 83.4kg and 206.21kg, respectively; with Abaeja taking the lead at 92.75kg and 207.72kg, respectively. The values above suggest that Moniya market and Abaeja market are lead markets in their respective typology (Main market and neighbourhood market)

Retailers and Supplier Relations across Market types.

In Table 14, we present the results of retailer-supplier nexus across the market types surveyed, including origin of supply, transactional characteristics, service received and given to suppliers and quality complaints. First, weekly inventory purchase was valued at 280.85kg at a unit price of ₦74.98/kg in the main markets; while average Neighbourhood inventory purchase was 323.41kg at ₦75.96/kg. Moniya market recorded purchase value of 284.73kg at ₦76.17/kg; while retailers in Ojoo purchased 277.86kg at ₦74.07/kg. While retailers in Abaeja purchased 406.96kg at ₦73.39/kg; Bagadaje retailers recorded 159.30kg at ₦81.02/kg. The results further confirm the lead position of Moniya market (for main market type) and Abaeja (for neighbourhood market type).

Table 14: Retailer and Suppliers Relations across Market Types

	Moniya	Ojoo	All Main Markets	Abaeja	Bgadaje	All neighbourhood markets
Weekly volume NOW (KGS)	284.73	277.86	280.85	406.96	159.30	323.41
Price per KG (N)	76.17	74.07	74.98	73.39	81.02	75.96
Origin of supply (%)						
Own production(n=8)	6(85.71)	32(94.12)	38(92.68)	3(50.00)	5(83.33)	8(66.67)
Directly from farmers	60(83.33)	72(66.67)	132(73.33)	48(84.21)	26(89.66)	74(86.05)
Rural Broker	9(12.50)	11(10.19)	20(11.11)	5(8.77)	4(13.79)	9(10.47)
Wholesaler	16(22.22)	21(19.44)	37(20.56	31(54.39)	8(27.59)	39(45.35)
Agrbusiness	-	1(0.93)	1(0.56)	1(1.75)	-	1(1.16)
Importer	1(1.39)	1(0.93)	2(1.11)	-	-	-
Transaction characteristics						
Share of retailers who buy product sorted (%)	23(33.33)	26(28.89)	49(30.82)	22(38.60)	10(35.71)	32(37.65)

Share of retailers who keep written records of purchase (%)	2(2.90)	1(1.11)	3(1.89)	2(3.51_	1(3.57)	3(3.53)
Share of retailers who have any agreement with suppliers (%)	9(13.04)	14(15.56)	23(14.47)	2(3.51)	1(3.57)	3(3.53)
Number of suppliers (frequency)	38.13	52.86	46.5	42.04	51.64	45.28
Number of regular suppliers(frequency)	13.77	12.10	12.8	13.65	14.13	13.80
<u>**Services PROVIDED to suppliers (%)**</u>						
No service provided	43(59.72)	53(49.07)	96(53.33)	38(66.67)	18(62.07)	56(65.12)
Advancement of money	11(15.28)	9(8.33)	20(11.11)	-	-	-
Inputs	1(1.39)	2(1.85)	3(1.67)	-	-	-
Harvests	2(2.78)	1(0.93)	3(1.67)	-	-	-
Own transport	19(26.39)	30(27.78)	49(27.22)	13(22.81)	6(20.69)	19(22.09)
Transportation arrangements	2(2.78)	4(3.70)	6(3.33)	5(8.77)	4(13.79)	9(10.47)
<u>**Services RECEIVED by suppliers (%)**</u>						
No service received	48(66.67)	69(63.89)	117(65.00)	51(89.47)	23(79.31)	74(86.05)
Delivery in stall	14(19.44)	16(14.81)	30(16.67)	1(1.75)	2(6.90)	3(3.49)
Sorting	3(4.17)	3(2.78)	6(3.33)	-	2(6.90)	2(2.33)
Sales on credit	11(15.28)	9(8.33)	20(11.11)	-	1(3.45)	1(1.16)
Packaging	21(29.17)	20(18.52)	35(19.44)	10(17.54)	5(17.24)	15(17.44)
Cleaning	1(1.39)	-	1(0.59)	1(1.75)	-	1(1.16)
<u>**Share of retailers who received complaints from suppliers over the past 12 months (%)**</u>						
Yes	35(48.61)	34(31.48)	69(38.33)	17(29.82)	14(48.28)	31(36.05)
No	37(51.39)	74(68.52)	111(61.67)	40(70.18)	15(51.72)	55(63.95)
<u>**Reason of complaint (%)**</u>						
Dirty product	2(2.78)	-	2(1.11)	-	-	-
Variety	2(2.78)	2(1.85)	4(2.22)	-	-	-
Color	6(8.33)	8(7.41)	14(7.78)	4(7.02)	1(3.45)	5(5.81)
Size	3(4.17)	5(4.63)	8(4.44)	3(5.26)	2(6.90)	5(5.81)
Firmness	9(12.50)	6(5.56)	15(8.33)	4(7.02)	-	4(4.65)
Lack of volume in the box	5(6.94)	8(7.41)	13(7.22)	2(3.51)	3(10.34)	5(5.81)
Rottenness	13(18.06)	10(9.26)	23(12.78)	6(10.53)	4(13.79)	10(11.63)
Bruised	3(4.17)	3(2.78)	6(3.33)	2(3.51)	3(10.34)	5(5.81)

Origin of Suppliers across Markets

Among the retailers who cropped fruits and vegetables, our survey showed that about 93% and 67% of those in the main markets and neighbourhood markets, respectively sold their own products (Figure 19). However, the main origin of supplies was directly from farmers, rural brokers, and wholesalers. Other were from Agribusinesses and importers. The main supply origin in both market type was directly from farmers, as reported by 73% and 86% of main market and neighbourhood market retailers, respectively, followed by wholesalers and rural brokers. While importers formed a very small proportion of supply for main markets, neighbourhood retailers do not purchase from this source.

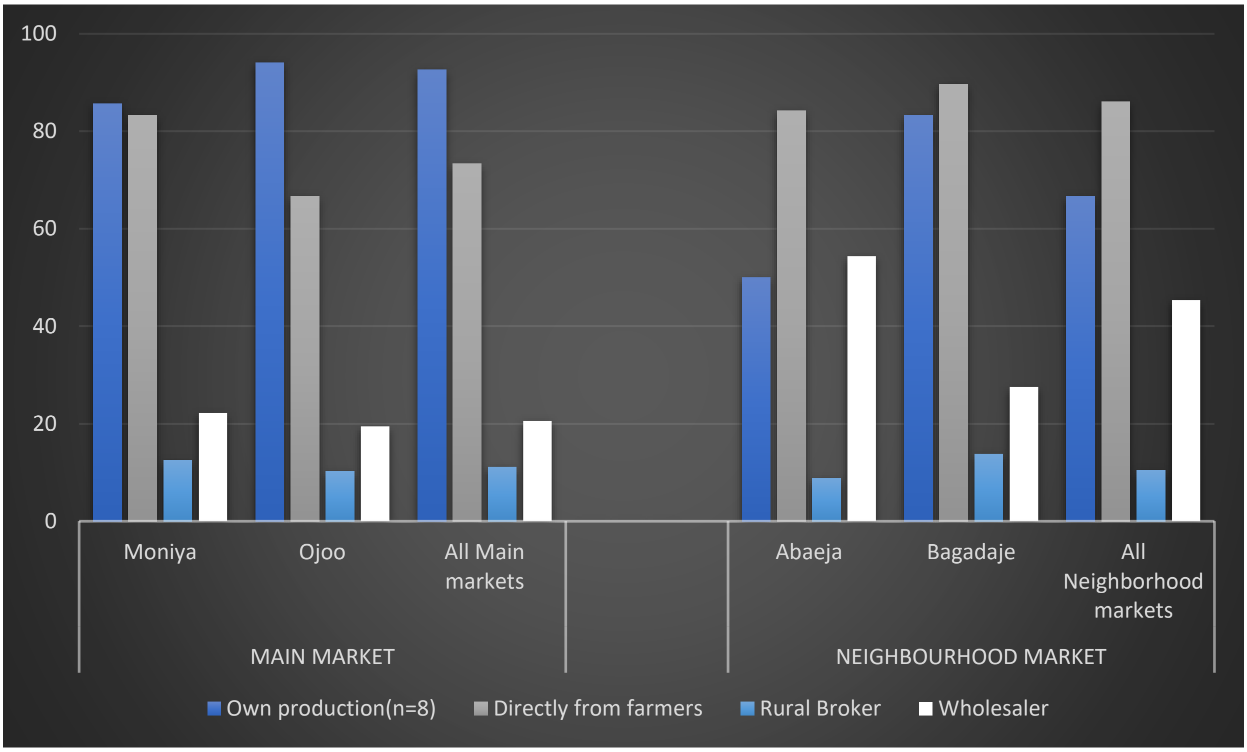


Figure 19: Major Suppliers across Market Types

On the average, retailers in the main market had more suppliers (~47) than those in neighbourhood markets (45). Regular suppliers were 13 and 14 in main markets and neighbourhood markets, respectively.

Transactional Characteristics in Retailer-Supplier Nexus

We found that a higher percentage of neighbourhood retailers (37.7%) bought sorted products when compared to 31% from the main markets (Table 14). This transactional characteristic was found more in Moniya (33%) and Abaeja (39%) in the two respective market types.

As reported across product types, retailers who kept records or had a contractual agreement with suppliers were not common. Our results found that just about 2% of main market and <4% of the retailers in the neighbourhood market kept records of purchase. With respect to purchase agreement with suppliers, at least 16% of retailers in the main market had such agreement; while only about 4% of neighbourhood retailers had it. This implies that the larger market had a higher level of organization than the neighbourhood market; thus, agreements are germane in the market system.

Services Provided to and Received from Suppliers across Market Types

We found that retailers in the main markets were able to provide a wider array of services to their suppliers including advancement(11.11%), inputs(1.67%), harvest (1.67%), own transport (27.22%) and other forms of transportation arrangements (3.3%). On the other hand, neighborhood retailers were only able to provide own transport (22%) and other forms of transportation arrangements (10.5%).

Our analysis shows that 65% and 86% of retailers in the main markets and neighbourhoods, respectively did into receive any service from suppliers (Figure 20). The main service received from suppliers in the main markets were Packaging (19%) and delivery of commodities in stalls (16.7%). Others include credit sales (11%) and sorting (3%). Neighbourhood retailers followed similar patterns with packaging and delivery in stall reported by 17% and 3% respectively. Sorting and credit sales were received by a mere 1% of the neighbourhood retailers. It is however surprising that although Abaeja has a higher volume of inventory purchase and sale, retailers in this neighborhood do not receive any form of service related to sorting or credit sales.

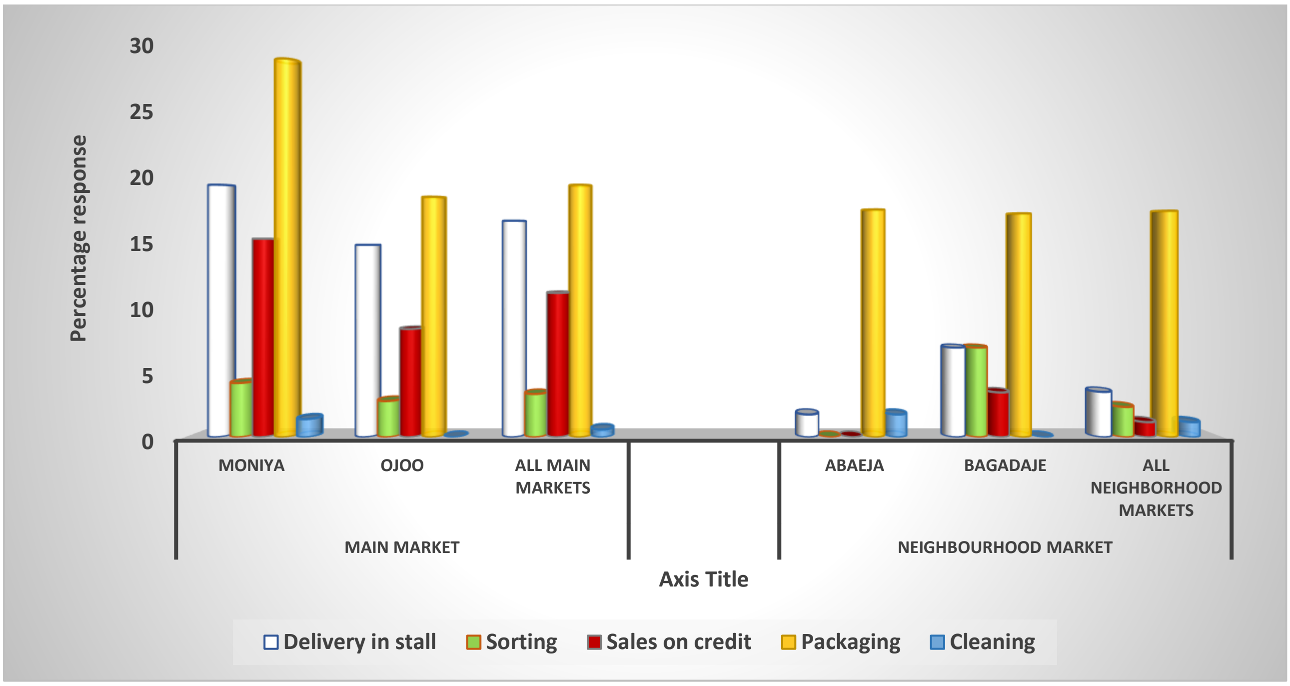


Figure 20: Services Received from Suppliers across Market Types.

Quality Complaints from Retailers to Suppliers

In this survey, less than 40% of the retailers made a quality complaint to their suppliers (38% in main market and 36% in neighbourhood markets). Among those who had a complaint, the results show that the main issue was related to rotten produce, as reported by 13% of main market retailers and 12% of neighbourhood market retailers. Other quality complaints in the main markets were in regard to firmness(8%), colour (8%) and use of unstandardized boxes (7%). While neighbourhood retailers did not report any complaint with respect to dirtiness and variety, it was reported by at least 1% and 2%, respectively among retailers in the main markets.

Retailer and Client/Buyer Relationship across Market Types

Retailer and client relationships across market types are presented in this section (Table 15).

Current Weekly Sales across Market Types

Weekly sales volume across market type was estimated at 358kg valued at ₦73.46/kg in the main markets while it was 89.61kg at ₦78.79/kg in neighbourhood markets. The lead markets with respect to sales in the main markets and neighbourhood markets, respectively were maintained at Moniya (441.5kg at ₦46.30/kg) and Abaeja (93.38kg at ₦ 86.50/kg). Retail sales in Ojoo market was estimated at 309.77kg valued at ₦80.68/kg; while Bagadaje retailers sold ₦82.86kg at 65/kg

Main Clients/Buyers

Again, we find that the retailers in the main markets had a wider range of clients than the neighborhood retailers. The results show that a larger proportion of sales was to direct consumers in both markets. However, neighbourhood retailers (~97%) sold more to consumers than market retailers (76%). The other major clients of retailers in the main markets in order of importance were traditional retailers (28.35%),street/sidewalk restaurants (19%) and Ambulant vendors (14%). In the neighbourhood markets, the other major clients were Ambulant vendors (8%) and traditional retailers (7%).

On the average, main market retailers served 1741 clients (Moniya; 1326 and Ojoo-1990); while neighbourhood retailers sold to 1256 customers (Abaeja; 1261 and Bagadaje; 1246).

Transactional Characteristics

Retailers in Neighbourhood markets probably have a more personal relationship with their customers, since they are the final stage in the value chain before final consumers. This reflects in the type of market structure in such markets (Figure 20). In view of this, we find that while 51% of neighbourhood retailers sold sorted products, only 35% of retailers in the main markets did so. In reality, sorted products attract more patronage and monetary premium, which are important for the going concern of neighbourhood markets.

While only 3% of retailers in the main market kept records of sale, there was no report of a sales record among neighbourhood retailers. Furthermore, up to 14% of retailers in the neighbourhood markets had an agreement with their clients, while 13% of retailers in the main market reported doing the same.

Table 15: Retailer- Client Relationship in Fruits and Vegetables Retailing Across Market Types

Retailers and Buyers

	Moniya	Ojoo	ALL MAIN MARKET	Abaeja	Bagadaje	ALL NEIGHBOURHOOD
Observations						86.00
Weekly volume NOW (KGS)	441.50	309.77	358.77	93.38	82.86	89.61
Price per KG (N)	46.30	80.68	73.46	86.50	65.00	78.79
Clients (%)						
Directly to consumers	49(68.06)	87(80.56)	136(75.56)	55(96.49)	28(96.55)	83(96.51)
Traditional retailer	22(30.56)	29(26.85)	51(28.33)	3(5.26)	3(10.34)	6(6.98)
Ambulant Street Vendors/hawkers	14(19.44)	12(11.11)	26(14.44)	6(10.53)	1(3.45)	7(8.14)
Street/sidewalk catering/restaurants	17(23.61)	17(15.74)	34(18.89)	2(3.51)	1(3.45)	3(3.49)
Neighbourhood supermarket	1(1.39)	-	1(0.56)	-	-	-
Restaurant	-	-	-	1(1.75)	-	1(1.16)
Transaction characteristics						
Share of retailers who sell product sorted (%)	25(35.71)	38(35.19)	63(35.39)	28(49.12)	16(55.17)	44(51.16)
Share of retailers who keep written records of sell (%)	3(4.17)	3(2.78)	6(3.33)	-	-	-
Share of retailers who have any agreement with buyers (%);	10(14.29)	13(12.04)	23(12.94)	8(14.04)	4(13.79)	12(13.95)
Number of clients	1,326.51	1,990.58	1741.0	1,260.65	1,246.43	1,255.98
Number of regular clients	43.34	63.70	55.9	41.42	48.52	43.85
Services PROVIDED to client (%)						
No service provided (n=180)	47(65.28)	60(55.56)	107(59.44)	42(73.68)	18(62.07)	60(69.77)
Discount over pricesn=180)	23(31.94)	42(38.89)	65(36.1)	20(35.09)	11(37.93)	31(36.05)
Volume discounts	22(30.56)	45(41.67)	67(37.22)	21(36.84)	14(48.28)	35(40.70)
Sales on credit	7(9.72)	11(10.19)	18(10)	7(12.28)	3(10.34)	10(11.63)
Packing	17(23.61)	19(17.59)	36(20.0)	9(15.79)	5(17.24)	14(16.28)
Special sorting	5(5.57)	4(4.30)	9(5.00)	2(3.51)	1(3.45)	3(3.49)
Other						
Share of retailers who received complaints from buyers over the past 12 months (%) (n=176)						
Yes	7(10.00)	19(17.92)	26(14.77)	8(14.04)	4(14.29)	12(14.12)
No	63(90.00)	87(82.08)	150(85.23)	49(85.96)	24(85.71)	73(85.88)
Reason of complaint (%)						
Dirty product	2(278)	-	2(1.11)	-	-	-
Variety	1(1.39)	1(0.93)	2(1.11)	1(1.75)	-	1(1.16)
Color	4(5.56)	13(12.04)	17(9.44)	4(7.02)	3(10.34)	7(8.14)
Size	2(2.78)	6(5.56)	8(4.44)	2(3.51)	2(6.90)	4(4.65)
Firmness	5(6.94)	7(6.48)	12(6.67)	5(8.77)	5(17.24)	10(11.63)
Lack of volume in the box	-	-	0	-	-	-
Deterioration/rotteness	2(2.78)	9(8.33)	11(6.11)	2(3.51)	1(3.45)	3(3.49)

Bruised	3(4.17)	3(2.78)	6(3.33)	1(1.75)	1(3.45)	2(2.33)
Other	2(2.78)	2(1.85)	4(2.22)	1(1.75)	-	1(1.16)

Services provided to Clients

The main service provided (Table 15) to clients in the main markets were volume discount (37%), price discount (36%), and packaging (20%). Credit sales and special forms of sorting were reported as services by 10% and 5% of the main market retailers. Similar services were provided by neighborhood retailers in the same order of importance so that volume discount, price discount, packaging, credit sales and special sorting were reported by 41%, 36%, 16%, 11.6% and 3%, respectively. The high proportion of retailers who gave volume and price discounts reflects the importance of bargaining in agricultural commodity markets.

Quality Complaints by Clients

Although only 14% of the retailers in the main markets and neighbourhood markets reported a quality complaint, there were differences in occurrence of these complaints across specific quality issues and market types (See Figure 21). We found that the most limiting quality issues was related to color (9%), firmness (7%) and rottenness (6%) in the main market. However, the order of complaints was firmness (12%), colour (8%) and size (5%) in the neighbourhood markets, respectively. Others include Dirty products and variety issues did not seem to be a major complaint across the market types.

Ojoo (main market) and Bagadaje (neighbourhood market) seemed to report higher occurrences of these complaints. Neighborhood vendors operate more independently, and due to relationships with consumers are more motivated to provide what their clients want.

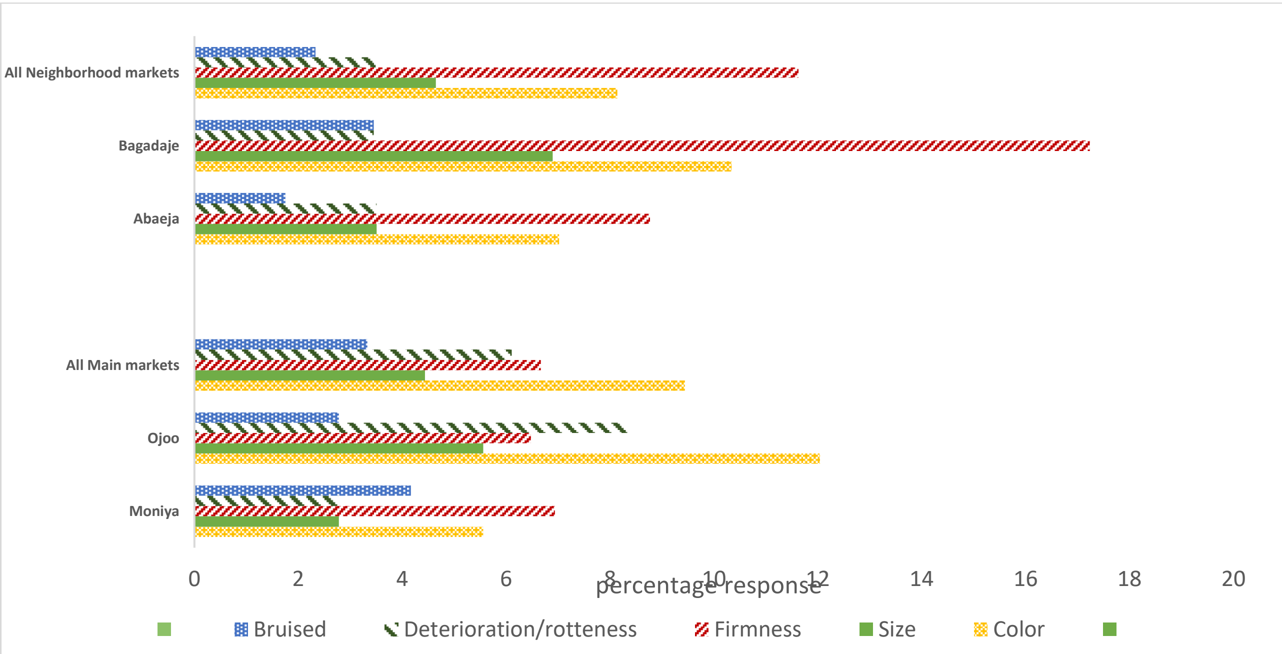


Figure 21: Client Quality Complaint across Market Types.

Asset Outlay of Retailers across Market Types

Locational Characteristics of Retailers across market Type

Market typology showed differences in location of retailers in this study (Table 16). Our results show that retailers in the main market were more likely to sell on Road display (65%), followed by the use of Permanent tables within the market (36%), market stalls/shop (7%). Transaction in homes, as hawkers and with wheel-barrows were less likely at 1%.

In the neighbourhood , stalls along main neighborhood roads were the most prominent (41%), followed by sales in home premises (25%) and permanent tables (24%). The use of road display was found among only 9% of the neighbourhood retailers.

Table 16: Locational Characteristics across Market Types

Market type / Location	Moniya	Ojoo	All Main Market	Abaeja	Bgadaje	All Neighbourhood
In home premises	1.39	0.93	1.11	21.05	34.48	25.58
Market stall/shop	12.50	3.70	7.22	36.84	48.28	40.70
Permanent table	8.33	36.11	25.00	28.07	17.24	24.42
Roadside display	76.36	58.33	65.56	14.04	-	9.30
Wheelbarrow(stationary)	-	0.93	0.56	-	-	-
Hawker	1.39	-	0.56			

Physical Asset Ownership across Market Types

The most important asset (Table 17)owned by the retailers in both markets are display items as reported by >90% of the retailers. In the main markets, other important assets include benches (79%), phone (8%), cane basket (76%), store (54%) and commercial umbrella (46%).

In the neighbourhood market, on the other hand, the most relevant assets aside display items were benches (80%), phones(76%), cane basket (57%), lamp (55%) and store (52%). These assets reflect the needs of retailers usually within short distances from the home (low proportion with commercial umbrella); and the likelihood of selling late into the evening (lamps).

The types and values of assets are indication of a low-capital base and hence low technology retail enterprise across the market types.

Table 17: Physical Asset Outlays across Market Types

Market type / Location	Moniya	Ojoo	All Main Market	Abaeja	Bagadaje	All Neighbourhood
Cane basket	63(87.50)	74(68.52)	137(76.11)	21(58.33)	7(53.85)	28(57.14)
Commercial Umbrella	24(34.29)	1(3.57)	82(46.33)	5(8.77)	1(3.57	6(7.06)
Wheel barrow(stationary)	4(5.71)	4(3.74)	8(4.52)	-	-	-
Display items	65(91.55)	101(93.52)	166(92.74)	53(92.98)	24(85.71)	77(90.59)
Motorcycle	1(1.41)	2(1.85)	3(1.68)	-	1(3.57)	1(1.18)

Tricycle	-		0	-	-	-
Micra(small vehicle)	-		0	-	-	-
Bus	-		0	-	-	-
Phone	59(83.10)	81(75.00)	140(78.21)	44(77.19)	21(72.41)	65(75.58)
Lamp	21(30.43)	36(33.33)	57(32.20)	35(61.40)	12(41.38)	47(54.65)
Store	45(64.29)	52(48.15)	97(54.49)	31(54.39)	14(48.28)	45(52.33)
Benches/stools	55(77.46)	86(79.63)	141(78.77)	47(82.46)	22(75.86)	69(80.23)
Refrigerator	-	-	0	2(3.51)	-	2(2.35)
Generator	-	1(0.93)	1(0.56)	-	-	-
Others	8(11.27)	10(9.35)	18(10.11)	6(10.53)	1(3.45)	7(8.14)
Total value of business assets (₦)	26,105.92	12,476.16	17914.55	11,578.16	10,948.21	11,370.65

Business Costs and Revenue Streams across Market Types

Our analysis reveals that while the main markets reported only one (1) paid labour, there were no paid labour in the neighbourhood markets. This indicates the small scale at which neighbourhood vendors operate. However, family labour use shows that at least 2 persons from the family works in the retailing enterprise. Weekly labour expense in the main market was estimated at ₦1232.51; with Ojoo retailers paying less (₦1063.46) than Moniya retailers (₦1683.33).

Weekly business cost outlay was estimated as the sum of all variable costs in the retail enterprise. This includes the cost of electricity, fuel, association fees, transportation, labour, rent, water bills and others. In the main market, weekly business cost was estimated at ₦921.41; across Moniya and Ojoo markets at ₦939.99 and ₦909.55, respectively. Expectedly, retailers in the neigbourhood markets had lower business expenses at ₦516.49; with Abaeja and Bagadaje's expenses as ₦522.26 and ₦505.69, respectively.

Cost on inventory, which is the cost of goods purchased for sale for the week was estimated at ₦5911.77 in the main markets. Moniya market had the higher purchase cost estimate (₦6030.98), while retailers in Ojoo purchased an average of ₦5835.68 in the recall week. In the neighborhood markets, inventory purchase was estimated at N4135.54 for the overall average. However, retailers in Bagadaje had higher inventory value (₦4312.14) than those in Abaeja (₦4045.64)

Cost of goods sold which was an addition of weekly business costs and weekly inventory purchase showed that Moniya market had the higher cost outlay (₦5997.36) among the main markets, with Ojoo retailers averaging cost of goods sold of N5803. 15. In the neighbourhood markets, Bagadaje had the highest cost outlay (₦4745.59); while Abaeja recorded weekly cost of ₦4393.06.

Revenue streams in fruits and vegetable retailing across market types showed that main markets had almost double the revenues of neighbourhood markets. Weekly revenue estimated for main market was N4964.85, with Moniya and Ojoo markets receiving ₦5064.96; and ₦4900.94. The neighbourhood markets recorded revenue of ₦2136.62; across Abaeja (₦2017.24) and Bagadaje (₦2350.69).

In view of the foregoing, we find that there was no profitable fruit and vegetable enterprises in any of the markets surveyed. It is therefore is interesting that the retailers all report some form of profit from their own recall. This could be attributed to the poor literacy levels and record keeping culture of retailers.

Table 18: Business Costs and Revenue Outlay across Market Types

Business Costs and Revenues Streams	Moniya	Ojoo	All Main Market	Abaeja	Bgadaje	All neighbourhood
Labour Use						
Daily workers	1.00	1.00	1	-	-	-
No. family member working in the shop/stall	2.38	2.24	2.3	2.49	2.21	2.39
Share of traders having family members a trader%	23(31.94)	41(37.96)	64(35.36)	14(24.56)	12(41.38)	26(30.23)
Labour cost per week	1,683.33	1,063.46	1232.51	-	-	-
Weekly Busines Cost						
Total weekly business costs (₦)	939.99	909.55	921.41	522.26	505.69	516.49
weekly cost of purchase of commodities/inventory	6,030.98	5,835.68	5911.77	4,045.64	4,312.14	4,135.54
Total weekly business cost including inventory	5,997.36	5,803.15	5878.82	4,393.06	4,745.59	4,510.57
Weekly Revenue	5,064.96	4,900.94	4964.85	2,017.24	2,350.69	2,136.62
Profit per KG (₦ thousands)	(108.32)	(86.50)	-94.61	(135.82)	(125.22)	(132.25)
Profit per KG (₦ thousands):SELF REPORTED	793.41	1,471.82	1200.46	709.60	381.55	591.84
Share of retailers who sell organic vegetables/fruits (%)	13(18.06)	22(20.37)	35(19.44)	1(100)	-	1(100)
Markup on organic products (%)	31.54	22.73	26	-	-	-

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APPENDICES

Appendix 1A: MLA Scoping Activity

This phase of the process was conducted to provide some background information on fruits and vegetable vendors, as well as the type of vendor (mode of selling) within the target locations. This phase was conducted between late June and early July 2019. All vendors in target markets and neighbourhoods that sold fruits and vegetables were counted from afar without any project interactions with enumerators. The scoping exercise was conducted at different times of the day in order to capture all categories of vendors – both early morning and late evening vendors. Also, the research locations were divided into sections using major boundaries, then each section was assigned to specific team of enumerators. This was in a bid to cover all sections and areas of the market and neighbourhood.

Markets	Times of Visit
• Ojoo	Weekday, Market day, week end
• Moniya (Oja-agbe)	Weekday, Market day, week end
• Aba-eja (Border)	Evening (6-7pm)
• Bagadaje (Apapa)	Morning and Afternoon (7-12pm)

Market days: Each market has a market day where goods are cheaper and farmers come from neighboring communities to sell their produce at farmgate prices. Ojoo market day is every nine days while Moniya's is every five days. The market day could fall on either weekday or weekend, and all markets were visited at least once on a market day to get an idea of the number of vendors on that day.

Non market days: Due to ebbs and flows in vendor presence during nonmarket weekdays and weekends, the team also made sure to visit on these days as well, as well as different times of days on non-market days.

Neighborhoods were visited in the morning and evening, when all vendors were sure to have arrived from the market and commence the neighborhood sales. Border market was a congregation of vendors at a neighborhood section, around the bridge leading to Abaeja community. It was a temporal market, only there because there was ongoing construction of a bridge that disrupted automobile movement. The stop over meant that people, especially in the evening, had to walk across the bridge path, leading to a group of vendors taking setting up shop. Most of the vendors were residents of surrounding communities. The bridge has been completed, so Border market has since been disbanded.

Vendors that were present throughout the day was not counted twice. This was achieved by dividing the market into sections and different team of enumerators were assigned to a particular section to reduce the likelihood of double counting.

As seen shown in the scoping checklist (appendix 1), the major focus of the scoping survey was to identify the

1. Number of vendors
2. Type of Vendors
3. Types of fruits or vegetables sold.

Table A1_1: Estimated number of F&V vendors in main markets

		Total fruits vendors	Total Leafy vegetables vendors	Total non-leafy vegetables vendors	Total vendors of both fruits and vegetables
	OJOO MARKET				
Market day	morning	45	134	47	30
	afternoon	81	77	138	33
	Evening	69	59	116	23
Weekend	morning	29	16	39	2
	afternoon	45	19	78	13
	Evening	40	26	76	16
Weekday	morning	4	11	14	1
	afternoon	42	25	59	10
	Evening	44	43	71	14
	MONIYA MARKET				
Market day	morning	30	55	55	1
	afternoon	33	41	109	15
	Evening	13	26	56	9
Weekend	morning	8	13	26	6
	afternoon	16	13	41	8
	Evening	15	19	52	9
Weekday	morning	3	5	10	2
	afternoon	9	18	32	9
	Evening	14	32	35	6

Table A1_2: Estimated number of F&V vendors by Neighborhood

	Total fruits vendors	Total Leafy vegetables vendors	Total non-leafy vegetables vendors	Total vendors of both fruits and vegetables
Abaeja (urban)	10	23	40	6
Bagadaje (peri urban	7	14	33	4

Table A1_3: Fruit and vegetable availability by market and area

	Market		Neighborhood	
	Ojoo market	Monya Market	Abaeja (urban)	Bagadaje (peri-urban)
Fruits				
Orange	✓	✓	✓	✓
Tangerine	✓	×	×	×
Tangelo	×	×	×	×
Banana	✓	✓	✓	✓
Avocado pear	✓	✓	×	×
pineapple	✓	✓	✓	✓
coconut	✓	✓	✓	✓
watermelon	✓	✓	✓	✓
agbalumo	×	×	×	×
iyeye	×	×	×	×
mango	×	×	×	×
golden melon	✓	×	×	×
cashew	×	×	×	×
apple	✓	✓	×	×
red grape	×	×	×	×
guava	×	✓	×	×
grape	×	×	×	×
ube	✓	×	×	×
soursop	✓	×	×	×
pawpaw	✓	×	×	×
African star apple	×	×	×	×
dates	✓	×	×	×
lime	✓	✓	×	×
bush mango/oro	✓	✓	✓	✓
passion fruit	×	×	×	×
lemon	✓	✓	×	×
Vegetables				
Leafy vegetables of all sorts	✓	✓	✓	✓
carrots	✓	✓	×	×
cucumber	✓	✓	✓	✓
Okra	✓	✓	✓	✓
tomato	✓	✓	✓	✓
Red peppers of all sorts	✓	✓	✓	✓
onion	✓	✓	✓	✓
garden egg	✓	✓	×	✓
cabbage	✓	✓	×	×
green peas	✓	✓	×	×
green bell pepper	×	×	×	×
spring onions	✓	✓	×	×
lettuce	✓	✓	×	×

Appendix 1B: MLA Scoping Checklist

Market Level Assessment Scoping checklist

NAME OF MARKET/NEIGHBORHOOD:

____

TICK APPROPRIATELY: WEEKEND ( )   MARKET DAY ( ) WEEKDAY ( )

ENUMERATOR NAME(S):

____

____

SECTION(S)/AREA VISITED:

____

____

Date of Visit (DD/MM/YY): …….... /…….…../ 2019

Day of Visit (day of the week) ____

Time of visit: (tick as appropriate)

Morning ( )   Afternoon ( )   Evening ( )

START TIME: ____________________ **END TIME:** ____________________

SECTION 1 : Number of Vendors

Instruction: *Take a tally of the different categories of vendors in the space provided, and provide the total at the bottom of the form when done***.**

	Fruits	**Vegetables**	**Both**
(Please enter tally for each category)			
	Fruits	**Vegetables**	**Both**
Total Number of vendors			

SECTION 2: Type of Vendor

(tick the appropriate options)

S/N	**Neighborhood**	**Market**
1	Hawker ( )	Hawker ( )
2	Wheelbarrow ( )	Roadside display ( )
3	Kiosk/counter ( )	Wheelbarrow ( )
4		Market stall/Shop ( )

If there are any others observed but not captured above, please list below by category

	Neighborhood	**Market**

Appendix 2A: MLA Census Activity

This was conducted in July 2019 after the scoping exercise. The purpose of the census was to enumerate all possible vendors in markets of interest selling fruits and vegetables.

As with the scoping exercise, target neighborhoods and markets were classified according to catchment area. A timeline for visits to the markets and neighborhood was also created. Each market was visited on a major market day and a non-market day (both weekday and weekend); while each neighborhood was visited on a weekend and weekday, since they had no major market day. Hence, the markets were visited three times while neighborhoods were visited twice, once again to ensure that vendors that came on certain days or at certain times of day were not missed out of the census.

Vendors selling target fruits and vegetables were enumerated after they gave their consent to participate. Their names, phone numbers, address/location, products that were in season and out of season, products sold in the past twelve months, products presently sold, products that will be sold in the next twelve months were collected. A total of 134 neighborhood vendors and 440 market vendors were enumerated.

There were a few noteworthy points related to the census:

- Not every vendor came to the market every day and stayed all day.
    - some vendors, particularly producers, only came to the market when they had substantive products to sell.
    - Some vendors only came on market days.
    - Others sold in different markets on market days.
- The duration of stay in the market for some vendors is dependent on how fast they sell out their products.
- Some vendors had double point of sales (e.g., selling in their shop and on the street), while others did not have a permanent spot, and where they sold on each market day was dependent on how early they arrived.
- Some neighborhood vendors sell inside their homes, so enumerators had to ask around where fruits and vegetables were sold. However, the information and description from the scoping was useful in identifying this category of vendors.
- Most vendor sales were constrained by seasonality – many sold whatever was in season.
- Many vendors did not have phone for follow-up.

Table A2_1 Census results

Area	Retailer type	Total number of actors in this area	Seller has a shop/stall	Seller sells other products (than F&Vs)	Average number of days seller spend at shop/stall	Average number of years of experience selling F&Vs	Average number of target products sold by sellers	Average number of F&Vs (ALL) sold by sellers
Abaeja	Hawker	1	0%	100%	7.0	20.0	2.0	3.0
	Inside the house	18	100%	72%	6.9	14.1	7.1	9.2
	Market stall/ shop	36	100%	86%	6.7	8.1	5.0	6.7
	Others (specify)	1	100%	0%	7.0	2.0	12.0	17.0
	Permanent table	19	100%	63%	6.7	7.4	6.6	8.6
	Roadside display (all)	10	60%	60%	6.7	9.7	6.1	8.7
Bagadaje	Hawker	1	0%	0%	7.0	5.0	3.0	5.0
	Inside the house	9	100%	56%	7.0	5.8	5.7	7.4
	Market stall/ shop	29	100%	93%	6.8	6.7	6.7	8.6
	Others (specify)	6	100%	100%	7.0	9.8	2.5	4.3
	Permanent table	8	100%	63%	7.0	7.5	7.5	9.9
Moniya	Hawker	1	0%	0%	2.0	8.0	3.0	3.0
	Market stall/ shop	16	100%	56%	5.4	14.9	5.4	7.8
	Others (specify)	6	67%	67%	1.0	5.4	3.2	4.5
	Permanent table	4	100%	25%	6.0	15.3	3.0	5.8
	Roadside display (all)	163	79%	42%	1.5	11.5	3.3	5.0
Ojoo	Hawker	4	25%	0%	3.8	4.1	2.5	3.3
	Market stall/ shop	7	100%	71%	5.3	17.1	1.3	2.7
	Others (specify)	3	100%	0%	1.7	14.7	2.3	4.0
	Permanent table	90	100%	42%	5.6	15.6	3.6	5.8
	Roadside display (all)	141	89%	40%	2.2	11.3	4.5	6.0
	Wheelbarrow (all)	6	100%	0%	6.0	2.5	0.7	2.0
	TOTAL	**579**						

Appendix 2B: MLA Census Survey

MARKET SURVEY FOR MLA CENSUS

JULY 2019

IDENTIFYING INFORMATION

1. Enumerator Name(S)/initials:____
2. Start time: ___________________________________(dropdown of AM or PM)
3. Date of Visit (DD/MM/YY): ……..... /……..……./ 2019
4. NAME OF MARKET
   a. Ojoo (go to 4b)
   b. Moniya(go to 4c)

4b. Ojoo market sections:

1. Police Station and environs (left and right side)
2. Big round about and small round about
3. Sabo, Abatakan/Barracks

4c. Moniya market sections:

1. From Police station
2. Towards Akuro and odo eran

5. Type of market day (pick one): a. Weekend b. Market day c. Weekday

6. Day of visit (choose one)

- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday

7. Time of visit: (choose one)

a. Morning b. Afternoon c. Evening

MAIN SURVEY

1.VENDOR NAME: ____

2. VENDOR NICKNAME:____

3a. VENDOR PHONE NUMBER: ____

3b. Vendor alternative phone number: ____-

4. What is your main occupation?

a) Full Time Farmer b) Full time trader c) Both d) Other (specify).

5. Do you have a permanent Stall in this market? Y/N if no, skip q6.

5b. Please describe where it is____

5c. Please give us the shop number __________________________________

6. Do you sell other things apart from fruit and vegetables? Y/N If no, skip to q7.

6b. What else do you sell? ____________________

7. Where do you live? ____

8. How long does it take you to get to this market from there? ________________hrs./minutes

9. Do you come to this market **every market day**? (i) Yes (ii)No iii) Other (specify)

10. How many days a week do you come to the market (apart from the market day)?

i) 6 days	iv) 3 days
ii) 5 days	v) 2 days
iii) 4 days	vi) 1 day

11a. How long have you been coming to sell in this market? ___________ years/months

11b.How many months have you spent in the market this year?

a)one b)two c) three d)four e) five f) six

12. How long do you spend in the market on days when you come on average? __________ hours

13. What time of the day do you usually come to the market? (pick several)

a) Morning b) Afternoon c) Evening d) All Day

14. WHAT fruits or vegetables do you currently sell? (*pick all that apply from fruit and vegetable list*)

15. Have you sold any fruit or vegetable apart from the above in the last 6 months? Y/N *if no skip to 16*

15b. What fruits or vegetables have you sold in the past? (*pick all that apply from fruit and vegetable list*)

16. Will you sell any fruit or vegetable apart from the above in the next 6 months? Y/N *if no skip to 17*

16b. What fruits or vegetables will you sell in the future? (*pick all that apply from fruit and vegetable list*)

17. Do you sell in any other markets apart from this one? Y/N. *If no, skip to 18*

17b.How many markets do you sell in? ______________ (enter number)

17c. Can you name them? (multiple entries)

a) Ojoo
b) Moniya
c) Sasa
d) Bodija
e) Apapa
f) Others (specify)

18 a. Are you a member of any groups or associations in the market? If no skip to 19.

18 b. Name them ____

19 What determines whether you come to this market or not?

20. Is it possible that you will stop coming to this market this year? Y/N *if no, skip to 22.*

21. When will you stop coming? (pick one month)

July	October
August	November
September	December

22. TYPE OF VENDOR : (pick 1)

a. Roadside display (cloth)	f. Wheelbarrow (mobile)
b. Roadside display (nylon)	g. Market stall/ shop
c. Roadside display (sack)	h. Permanent table
d. Roadside display (tray)	i. Inside the house
e. Wheelbarrow (stationary	j. hawker (go to 23)
	k. Others (specify)

23. Do you own a store or an you an independent hawker (pick one):

a) Independent b) from market stall/shop.

24. WHAT IS YOUR normal daily route? ____

25. Interview end time: ___________________________________(dropdown of AM or PM)

26. ENTER GPS COORDINATES

<u>THANK RESPONDENT AND END INTERVIEW</u>

Fruit and vegetable list to select from:

Fruits	**Common/local name**
Orange	Osan
Tangerine	Tanjarini
Tangelo	Tanjalo
Grapefruit	Grepu
Banana	Ogede
Pawpaw	Ibepe
Avocado pear	
Pineapple	Painapu
coconut	Agbon
watermelon	Wotamelo
iyeye	Iyeye
Mango	mongoro
golden melon	--
Cashew	**Kasu**
apple	Apuu
red grape	Grepu pupa
guava	Guofa
grape	--
Palm fruit	--
African pear	ube
soursop	Sawasop
Papaya	Ibepe
African star apple	Agbalumo
dates	
lime	Orombo weere
bush mango	Oro
passion fruit	--
lemon	
Green-leafy Vegetables	
Malabar spinach	Amunututu, gbagana, laali
Bitter leaves	Ewuro
Amaranthus	Efo soko
African spinach	Efo tete
Wild spinach	Tete ibile
Jute leaves	Ewedu
Water leaves	Gbure
Fluted pumpkin leaves	Ugwu
Non leafy vegetables	
carrots	Karooti
cucumber	Kukumba
Okra	Ila
tomato	Tomato
Red peppers of all sorts	Ata
onion	Alubosa
garden egg	Igba
cabbage	--

green peas	--
green bell pepper	Tatase dudu
Red bell pepper	Tatase pupa
spring onions	Alubosa oyibiri
lettuce	--

Appendix 3: MLA Measures Activity

The MLA measures phase was conducted after the main MLA survey between September and October 2019. Prices and weights derived from the MLA measures study made it possible to convert local measures of fruits and vegetables to standard measures (kg). In order to achieve this, an exhaustive list of measures for each level or size of product was developed. All the products were weighed according to their measures as it was purchased from the buyer at point of purchase. As in previous rounds of MLA activities, vendors in target markets and neigborhoods were interviewed on market day, weekday, and weekend for markets, as well as, weekday and weekend for neighborhoods. This was so that true weights and measures of products would be derived . Products were measured at different times of the day in order to cover all possible variations of weights by time of day, or type of market day. Weighing scales (Camry & Seca) was used to measure products, and measuring tape was used to measure containers like baskets. Most of the respondents were those who participated in the census and MLA, although a few vendors that were not involved in the main MLA phase were included in this phase because there were some local measures which could not be found with survey respondents by the time this activity was being conducted.

The different types of local measures and their average weights across time and type of market day are listed in Table A3_1.

.

Table A3_1 Summary of weights and prices for conversion of local measures to standard measures (KG)

COMMODITY/ LOCAL MEASURE	WEIGHT (KG)	PRICE(₦)
EWEDU		
Large Bundle	13.00	1,021.43
medium bundle	1.10	110.42
Small bundle	0.35	50.00
SOKO IBILE		
Large Bundle	5.69	408.08
medium bundle	0.77	100.00
Small bundle	0.51	50.00
SOKO AGRIC		
Large Bundle	19.60	1,000.00
medium bundle	1.38	143.33
Small bundle	0.42	50.00
TETE IBILE		
Large Bundle	11.98	1,000.00
Medium bundle	0.98	75.00
Small bundle	0.60	50.00
TETE AGRIC		
Large Bundle	48.79	2,141.21
medium bundle	1.79	155.28
Small bundle	0.46	52.38
UGWU		
Large Bundle	19.13	3,841.67
medium bundle	1.36	397.92
Small bundle	0.26	67.92
WATER LEAF*		
Bagco Bag	4.32	225.00
Idi (heap)	0.67	47.47
Idi(heap)	0.50	23.13
BITTER LEAF		
Large Bundle	3.06	240.00
medium bundle	1.28	73.33
Small bundle	0.51	36.72
WET BITTER LEAF*		
Congo	1.32	325.00
Portion	0.42	75.00
OKRO		
Standard Basket	5.61	1,241.67
small Bucket	2.69	300.00
small plate	0.25	50.00
RED BELL PEPPER	-	-
small Bucket	2.07	913.57
Large plate	0.61	200.00
Medium Plate	0.27	100.00
small plate	0.20	50.00
WHITE GARDEN EGG	-	-
Big Sack	39.60	2,850.00
small sack	23.60	1,500.00
Bagco bag	12.00	-
Medium Plate	0.53	100.00
small plate	0.65	50.00
GREEN GARDEN EGG	-	-
small sack	32.60	2,700.00
Medium Plate	0.45	100.00
small plate	0.52	50.00
ORANGES		
Big sack	35.65	4,000.00
owo pieces#	1.29	72.92
large heap	1.50	193.75

Medium heap	1.12	100.00
small heap	0.61	50.00
TANGERINE	-	-
Large basket	27.95	1,750.00
medium basket	20.50	1,500.00
Standard basket	6.00	750.00
Medium heap	0.92	100.00
small heap	0.52	50.00
TANGELO	-	-
Large basket	24.68	1,675.00
medium basket	21.07	1,600.00
Standard basket	9.40	800.00
large heap	0.86	162.50
Medium heap	0.87	100.00
small heap	0.49	50.00
AGBALUMO(African star apple)		
Oje large basket	31.35	2,750.00
Large basket	25.79	1,850.00
Medium basket	7.70	683.33
Small basket	5.89	275.00
Small heap	0.57	100.00
Smallest heap	0.52	50.00
Unit of 3 pieces	0.23	50.00
MANGO		
OJE(OGBOMOSO MANGO)		
Standard basket(big)	13.62	1,000.00
Standard Basket (medium)	10.28	800.00
OGBOMOSO MANGO		
Large basket	30.84	1,800.00
Medium basket	9.92	500.00
Standard basket(big size)	-	-
Standard basket (medium size)	6.58	600.00
Small heap	0.91	133.33
Small heap (hard)	0.83	100.00
Small heap(soft)	0.82	100.00
Small measure	0.93	100.00
Smallest measure	0.61	50.00
CHERRY MANGO		
Large basket	31.39	1,000.00
Medium basket	9.70	300.00
Standard basket(big size)	-	-
Standard basket (medium size)	9.20	500.00
Small heap	0.77	100.00
Small heap (hard)	-	-
Small heap(soft)	-	-
Small measure	1.17	75.00
Smallest measure	0.86	50.00
PAWPAW		
Basket	2.34	171.00
Large piece	3.07	285.21
Medium piece	1.62	101.15
small piece	0.82	46.27
PINEAPPLE		
Basket	-	-
Large piece	2.99	650.00
Medium piece	1.33	289.35
small piece	1.06	243.75
WHITE BANANA		
Large stick	8.68	582.08
Medium stick	6.11	375.63
small stick	5.08	189.26

Bunches	0.79	72.19
YELLOW BANANA		
Large stick	7.70	500.00
Medium stick	4.88	450.00
Bunches	0.90	111.25
ONION		
Large Owo	7.10	2,000.00
Medium Owo	3.80	1,000.00
Small owo	3.05	750.00
Large plate	0.64	191.67
medium plate	0.34	100.00
Small plate	0.22	50.00
Small onion pieces	0.09	20.00

NOTE: * these vegetables do not have standard measures. Therefore, acceptable measure of BAGCO SACK (for water leaf) and a CONGO (for wet bitter leaf) were used to ascertain the weights and corresponding prices of the largest measures sold in the markets.

#: owo is made up of a number of pieces of the fruit/vegetable sold as a measure. For oranges, the "owo" depends on the sizes. An average of the sizes was taken for the markets.

In the case of onion, a standard "owo" is made up of 42 pieces. However, the weight of each piece will determine the price. Hence, small owo, medium owo, large owo.

Appendix 4: MAIN MLA SURVEY

FVN FRESH FRUIT & VEGETABLE RETAILER SURVEY

Informed consent and confidentiality of interviews Good morning/afternoon, Mr/Mrs _______. My name is ______ and I am here to administer a survey on behalf of______. Your business is one of the few selected. The purpose of this survey is to gather information about fruit and vegetable consumption. The interview will take about ____. All the information we obtain will remain strictly confidential and your answers and name will never be revealed. Also you are not obliged to answer question you do not want to, and you may stop the interview at any time. The objective of this study is to assess the dynamics related to fruit and vegetable markets and its consumption. This is not to evaluate or criticize you, so please do not feel pressured to give a specific response and do not feel shy if you do not know the answer to a question. I am not expecting you give a specific answer; I would like you to answer questions honestly, telling me about what you know, how you feel, the way you live and how you eat and prepare food. Feel free to answer questions at your own pace. Would you like to participate in this survey? 1.Yes☐ 2.No☐Signatures

I. PRELIMINARY INFORMATION

5. Enumerator Name(s)/initials:____
6. Start time: ____________________________________(dropdown of AM or PM)
7. Date of Visit (DD/MM/YY): ……... /…….……/ 2019
8. *NAME OF MARKET
   c. Ojoo (go to 4b)
   d. Moniya (go to 4c)

4b. Ojoo market sections:	4c. Moniya market sections:
4. Police Station and environs (left and right side) 5. Big round about and small round about 6. Sabo, Abatakan/Barracks	3. From Police station 4. Towards Akuro and odo eran

5. Type of market day (pick one): a. Weekend b. Market day c. Weekday

6. Day of visit (choose one)

○ Sunday ○ Monday ○ Tuesday	○ Wednesday ○ Thursday ○ Friday ○ Saturday

7. Time of visit: (choose one)

a. Morning b. Afternoon c. Evening

II. GENERAL INFORMATION

8. Relevant Products sold by vendor

1.□
2.□
3. □
4.□
5.□

9. Type of retailer:_

a. Roadside display (cloth, nylon, sack, tray) b. Wheelbarrow (stationary c. Wheelbarrow (mobile) d. Market stall/ shop	e. Permanent table f. Inside the house g. hawker h. Others (specify)

10. Name of respondent: ______________________
11. Gender of the respondent: 1.M□2.F□
12. Age: ________
13a. Are you the owner of this business? (*if yes, skip to 14a)*
13b. Respondents relationship with owner: _____ **[Key: 1 spouse, 2 son/daughter, 3 other]**

BUSINESS DETAILS
14a. * **Are you the only person funding this business. Yes/No (** ***if yes, skip to 15)***
14b. How many partners are in the business: _____________
15. How long have you (business) been selling fruits and vegetables in THIS location?

16 *Do you sell fruits and vegetables in any other location? 1.Yes□2.No □(*if no, skip to question 22*)

17. Where is it located? (multiselect)	**18.** how do you sell in those places (options in question 9)	**19. How are the property owned.** (multiselect)	**20. how** many stalls/shops do you have in those places (numeral)	**21.** since when? (year)
Moniya		Rented		
Ojoo		borrowed		
Abaeja		Owned		
Bagadaje		Market fee		
Sasa		none		
Bodija		Other		
Onidundu				
Ijaiye				
Elekuru				
Others, specify				

22. In what other businesses/profession are you involved (indicate type of business)?
Groceries/provision
Clothing/wears
Kitchen utensils
Farming
Other food stuffs
Other, specify

III. PRODUCT COMERCIALISATION

23. Product	**24.** How often is [product] supplied while in season? CODE 1	25. In what months do you sell the product?	26. When is the high season for this crop?	27. When is the low season for this crop?
1.□				Ask if there is another product, yes/no if no, skip 23bi to 27v and move to 28
2.□				
3. □				
4.□				
5.□				

CODE 1: 1. Daily, 2. Every two days 3. Weekly 4. Every three days .5. *Other (specify)

IV. Selling volume per season (for your current stall/shop in this neighborhood)

	NOW				**5 YEARS AGO**	
28. Product	**29.** ***Average weekly volume in high season	**30.** ***Average weekly volume in low season	**31.** ***What is the maximum weekly volume (Kgs) that you have sold in the last 12 months?	**32.** ***What is the minimum weekly volume (Kgs) that you have sold in the last 12 months?	**33.** ***Average weekly volume in high season **5 years ago**	**34.** ***Average weekly volume in low season **5 years ago**
1.						
2.						
3.						
4.						
5.						

V. Own production

35a. ***Did you far**m with produce that is yours in the past 12 months? Yes/No if no, skip section
35b. ***Did you sell produce fro**m your farm in the past 12 months? Yes/No if no, skip section.

36. Product	**37.** Did you crop [product] in the last 12 months? 1.Yes 2.No	**38.** *What was the cropping area? (m^2)	**39.** When did you begin cropping? (year)	**40a. where is the neighborhood of your far**m **40b.** How long does it take you to get to the selling point	**41.** ***Weekly Volume provided by your farm in the last 12 months
1.□					
2.□					
3. □					
4.□					
5.□					

VI. Types of Suppliers

42 *You have mentioned that you sell products from question 8 above, is 100% of it from own production? Yes/No if Yes, skip entire section

N.B before question 47, the screener question is How do you buy it? (so as to know the unit of the product)

	P1. ________			P2. ________			P3. ________			P4. ________			P5. ________		
43. Aside from your own production, who are your top three suppliers for each product? SUPPLIER TYPES															
44. How many of this type of supplier did you buy from in the last year?															
45. How many of these actors are regular suppliers?															
46. Since when did you begin buying [product] from this type of supplier?															
47. ***Weekly Volume purchased from this type of supplier NOW (if not presently sold, ask for previously sold)															
48. Price per Unit NOW (if not Kg used, then specify Unit) (Naira)															
49. Where are the products from this supplier coming from? LOCATION															
50. How do you buy this product from this supplier? 1. Unsorted 2. Graded/Sorted, 3, other															
51. Where is the DELIVERY of this product?															
52. Do you buy this product to sell or just charge a commission to the supplier?															
53. Do you pay this supplier at the moment of transaction? (1. Yes 2. No) if yes, skip to 55															
54. How long does it take you to pay them? (days)															
55. Do you have any agreement with them? 1. Written, 2. Verbal 3. Do not have															
56. Do you keep written records of the purchase transactions? Yes/No															
57. In the past 12 months, did you make any complaint or price cut about quality issues? 1.Yes__ 2.No if no, skip to 60															
58. If you have made claims about quality, what was the motive? QUALITY															
59. How did you solve this problem? SOLUTION															
60. What services do you receive from the suppliers? SERVICES RECEIVED															
61.What services do you perform for your suppliers ? SERVICES PROVIDED															

SUPPLIER TYPES: 1. Directly from farmers, 2. Rural broker/middleman/baranda, 3. Wholesalers, 4. Importer, 5. Farmer's cooperative, 6. Agribusiness
LOCATION: 1. Within Ibadan , 2. Outside ibadan but from oyo state, 3. Other states in Southwest 4. Northern Nigeria 5. Other regions apart from Southwest and North 6. Neighboring African countries 7. I don't know

DELIVERY: 1.At your stall/shop 2. At the seller's place 3. Others
CODE Q10: 1.buy 2. commission 3. own prod. . Other regions apart from Southwest and Nor
QUALITY 1. dirty product __ 2.Variety __ 3.Color __4.Size ___ 5.firmness__ 6.lack of volume in a basket/bag __ 7. deterioration/rottenness 8.Bruised 9.Others___

SOLUTION 1. Did not buy the product ___ 2.Negotiated the price ___ 3. Bought, but because of lack of option 4.Others ___ SERVICES RECEIVED: [Key: 1 delivery in stall 2 sorting, 3 sales on credit, 4 packing, 5 cleaning 6. No service SERVICES PROVIDED: [1 advancement of money, 2 inputs, 3 harvests, 4 own transport, 5 transportation arrangements, 6 No service 7. Others]

Last purchase from a supplier (only one product, the one that purchased last, or the most common)

Instruction: Now think about your last purchase of product or frequently purchased product. 1.□ 2.□ 3.□ 4.□ 5. □

62a. product___________ use the products dropdown in question 8
62b. product Variety _________________________
63. What date did you buy it? _____________
64. Did you buy raw (i.e unsorted) product? 1. Yes_____ 2. No___ (If no, skip to question 67)
65. ***How many kgs (if other unit, specify unit) did you buy? ____________________
66. ***At what price per kg (or unit)?____________
67. *Did you grade the product? 1. Yes_____ 2. No___ (if no, skip to 69)

68. ***How many kgs came out of each grade?
quantity of High grade ___numeral
select volume_____ (use unit dropdown)
Price ____ numeral

69. Did you buy sorted product? 1. Yes_____ 2. No____ (If you did not buy sorted product skip to 72)
70. ***How many graded bags / boxes / dozens did you buy?
a.Grade high ____ volume____Price ____ b. Grade medium ___________ volume__________
c. Grade low __________ volume___________
71. Who did you buy it from? _____________________

72. Costs and payments	**73.** if you paid, what was the total amount? (N)	
	Cost	Unit
a. did you pay for product harvest Yes/No		
b. sorting at the farm		
c. packing at the farm		
d. truck loading (include it in TAB		
e. transportation cost to the selling point		
f. clearance costs		
g. weighting costs		
h. middle man/baranda costs		
i. Wholesale market costs		
j.costs of downloading in your stall		
k.costs on case exchange (Baskets,cases,sack)		
l.sorting in your stall		
m.advance given to the farmer		
n.advance given to the broker		
o.your own transportation costs		
p.Other costs		

74. where was the buying place to the last transaction? (SHOULD BE IN TEXT)

43 Clients

	P1. ________			P2. ________			P3. ________			P4. ________			P5. ________		
75. Clients (Top three types of clients per product)															
76. To how many clients of this type did you sell in the last 12 months?															
77. How many of them are regular clients?															
78. Since how long have you been selling to this type of client?															
79. ***WeeklyVolume sold to this type of client NOW															
80. ***Price per Kg NOW (If not Kg, specify Unit)															
81. Do you sell the product graded/sorted? 1. Yes 2. No															
82 Where do you deliver the product? DELIVERY															
83. Do this client pay at the moment of transaction? (1. Yes 2. No)															
84. If you offer discounts to buyers, in what cases do you do this? (KEY 3)															
85. Do you keep written records of the sales transactions? (KEY 1)															
86. Do you have an agreement?1 Verbal 2 Written 3 Don't have															
87. In the past year, did a client demanded price cuts for the quality of your product? 1.Yes__ 2.No															
88.*In the past year, did a client reject your product? 1.Yes__ 2.No (if no, skip to 92)															
89. If you have had quality claims, they were based on? QUALITY															
90. How did you solve this problem? SOLUTION															
91. What services do you provide for this type of clients? (KEY 2)															

Clients: 1. Directly to consumers, 2. Traditional retailer, 3. Ambulant street vendor/hawker 4. Street/sidewalk catering/restaurant, 5. Neighborhood supermarket. 6. Restaurant, 7. Chain-based convenient store/food co/shoprite 8. Others

DELIVERY: 1.At your stall 2. At the clients' place 3. Other place________

KEY 1: 1. yes, maintain written detailed records of every transaction, 2. I only have written records of how much I sell for every product in a day 3. I only have written records of how much I earn in a day 4. I do not maintain any written records

KEY 2: 1. discount over prices 2. volume discounts 3. Sales on credit 4. Packing 5. Special sorting 6.other____________________

KEY 3: 1. Yes, when they buy large quantities, 2. Yes, on lower quality products, 3. Yes, for frequent buyers, 4. no discount 5. Other (specify) __(Add to TAB)_________

QUALITY 1. Dirty product___ 2.Variety ___ 3.color ___ 4. Size __ 5.firmness__ 6.Box filling ___ 7. Deterioration/rottenness 8.Bruised 9. Others (Add go TAB)____

SOLUTION1. Lost the customer ____ 2. Renegotiate the price ____ 3.Replace the product ___ 4.Other

44 Last sale (for only one product)

Now think about the last time that you sold 1.□ 2.□ 3.□ 4.□ 5. □
92. Variety ____________________
93. What date did you sell? _____________,
94. *did you grade the product? 1. Yes ____ 2.No ___ (If you answered no, skip to the question 95)
95. ***If you sold by grades, what were the grades and volumes sold?
Grade high __________ volume___________ Grade medium ___________ volume__________
Grade low __________ volume___________
(screener question) any other grade category yes/no if yes, provide grade name (text) in numeral answer, and the unit dropdown
96. Who did you sell the product to?______________________

97.*Do you pay anything to government or market after every sale? Yes/no if no, skip to 100a

98. Costs and payments	**99.** if you paid, How much did it cost?	
	Cost	Unit
a.Did you pay Sales tax Yes/No		
b.sorting for buyer		
c.special packaging		
d.product load to the transportation means		
e.transportation from your stall to your buyer delivery point		
f.product download		
g.Other expenses		

100a. *Is your last sales location different from this location. Yes/No if no, skip to 101

100b Where is it? (text)

101. ***How much did you profit per kg (or sale unit) sold in last sale? __________
102. ***How much is the maximum that you have profited per kg (or sale unit) on entire lifetime sales?
____
103. ***How much is the minimum that you have profited per kg (or sale unit) on entire lifetime sales?
____

104. *Do you regularly check the prices in other markets? 1.Yes__ 2.No __ 3. I don't know(ADD TO TAB) *(If no, skip to question 108)*
105. Where? _______________

45 FOOD SAFETY (This whole section might be revised slightly for the Nigerian context. A bigger focus on basic hygiene as well as pesticides would be good to include**)**

106. *Do you sell organic produce? (1 Yes, 2 No 3 I don't know (ADD TO TAB) _____(if no, skip to 108)
107. If you sell organic produce, what is the markup compared to the traditional price? ______ %
108. *Do you sell imported product? (1 Yes, 2 No 3 I don't know(ADD TO TAB) (if no, skip to 110)
109. Do your customers know if they are buying imported produce? (1 Yes, 2 No)

110. Do you know if the produce that you buy and sell has agro-chemical residues? (1 yes, I know it is clean from chemical residues, 2 yes, I know that sometimes the produce that I sell might have agro-chemical residues, 3. I have no idea, if the products that I sell have or don't have agro-chemical residues) _______

111. if you know if your produce have or don't have agro-chemical residues (Q134:1 or 2), Do your customers know if the produce that they are buying have or don't have agro-chemical residues? (1 Yes, 2 No) ______

46 STORAGE AND INFRASTRUCTURE

Own and rented infrastructure and equipment for operation of your business in THIS location**:**

112. Equipment	**113.** Quantity	**114.** Property 1. owned 2. rented 3.borrowed	**115.** Capacity/ Unit (small, medium or large)		**116.** If owned equipment, since when?	**117.** How much did it cost?₦	**118.** If rented, what is the monthly rent?
a. Do you have Cane basket. Yes/No							
b. Commercial Umbrella							
3.Wheel barrow							
4.Display items (tray, table, sack, tyre)							
5.Motorcycle							
6.Tricycle							
7.Micra							
8. Bus							
9. Phone							
10.Lamp							
11.Store							
12.Benches/Stool							
13. Refrigerator							
14. Generator							
15. *Other, specify___________							

Storage and perishability of the products and other information

*119. *Do you have a place where you store your produce? Yes/No (screener question) if no, skip to 127*

120. Product (should be single select on TAB)	**121.** ***How much of each product can be stored in your stall/shop?	**122** *.How is the [product] stored normally? CODE 2 (by number of days)		**123.** What is the maximum storage time in dry season? (days)	**124.** What is the maximum storage time in raining season? (days)	**125.** ***Considering your weekly volume, What is the waste in high season (Kgs)?	**126.** ***Considering your weekly volume, What is the waste in low season (Kgs)?
1.	Replace with units					Replace with units	Replace with units
2.							
3.							
4.							
5.							

CODE 2: 1. Room temperature 2. Chilled/refrigerated 3.dew temperature

1. BUSINESS COSTS (FIXED AND VARIABLE)

Employees

127. Number of employees that you have in THIS shop/stall (Does not include family members)
Permanent ____________ per day ________per task apprentices Other______

128. How many family members do you have working with you selling these products?___________________

129. How many of your family members are traders of these product on their own?

____

130. Cost category	**131.** Amount (Naira)	**132.** Time frame CODE 1
1.did you pay for Electricity Yes/No		
2.Rent of stall		
3.Market/commune fee		
4,Association fee		
5.Public toilet		
6.Electric generator fuel		
7.Labor expenses		
8.Transportation maintenance		
9.Car insurance		
10.Well/Piped water/ borehole/Meruwa		
11.Telephone		
12.Internet/Data		
13.Pest control		
14. Other taxes		
15.Other expenditures		

CODE 1: 1. Daily, 2. Weekly, 3. Every two weeks 4. Monthly, 5. Every six months, 6. Yearly.

133. For how much (Naira) would you be willing to abandon your stall for a week?_____________

Thank You

134. Time Interview Ended
135. GPS Coordinate